APPENDIX F-I

Delineation Reports

APPENDIX F-I.1

Death Valley

Huffman-Broadway Group, Inc.
Environmental Consultants

Investigation of the Presence of Wetlands and Other Waters of the United States DesertXpress Project HUC 8 Death Valley - Lower Amargosa Watershed Draining to Badwater Basin San Bernardino County, California

July 2010

Prepared for

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1.0 INTRODUCTION

1.1 Project Purpose and Scope of Work

DesertXpress Enterprises, LLC (DXE) is proposing to construct and operate a dedicated two-tracked high speed passenger railway and associated operations and maintenance facilities between Victorville, California, and Las Vegas, Nevada (DesertXpress Project; Exhibit A, Figure 1). A Draft Environmental Impact Statement was issued for the project in March of 2009 and the Final EIS is nearing completion. A Supplemental Draft EIS has been prepared and will be issued shortly to address certain modifications to the proposed alignment and station locations made by the Applicant, DXE, in response to various comments made on the Draft. The U.S. Department of Transportation, Federal Railroad Administration (FRA) is the lead agency responsible for preparing the project Environmental Impact Statement (EIS).

In preparation for the permit phase of the project, DXE has retained Huffman-Broadway Group, Inc. (HBG) to investigate the presence of wetlands and other waters potentially subject to Corps and EPA regulation under Section 404 of the Clean Water Act (CWA) along the DesertXpress Project's preferred and alternative alignments and study areas for the stations and ancillary facilities.

For the purpose of the jurisdictional delineation study the proposed DesertXpress Project has been divided into six areas using the USGS HUC 8 [1] level of watershed classification. The scope of this report is to evaluate the presence or absence of wetlands and waters potentially subject to Corps CWA jurisdiction within the proposed DesertXpress Project alignments and facilities located within the HUC 8 Death Valley - Lower Amargosa watershed, which drains to Badwater Basin (Exhibit A, Figure 2 and Exhibit D). Badwater Basin, an ephemeral dry lake with no hydrological surface water outlet, is in Death Valley, California, and is at the lowest elevation in the United States (- 282 feet msl).

This study was conducted in accordance with *Code of Federal Regulations* (CFR) definitions of jurisdictional waters, the Corps' 1987 *Wetlands Delineation Manual*, the Corps' 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*, and supporting guidance documents. The remaining portions of Section 1.0 provide project contact information, describe the location of the Study Area and provide technical details regarding the general environmental conditions found within the Study Area, including relevant technical information from the Draft EIS regarding water resource data and biological and cultural resource information. Section 2.0 provides regulatory background information and

[1] HUC = U.S. Geological Survey (USGS) Hydrologic Unit Code. The Hydrologic Unit system is a standardized watershed classification system developed by USGS in the mid 1970s. Hydrologic units are watershed boundaries organized in a nested hierarchy by size. They range in size from national regions, to the smaller cataloging units (HUCs), which are roughly equivalent to local watershed.

details regarding the technical criteria and types of field indicators evaluated for during the study. Section 3.0 provides a detailed description of the methods used during this investigation. Section 4.0 provides a description of technical findings and Section 5.0 describes the types of areas found that potentially may be subject to Corps CWA jurisdiction. Section 6.0 is a Clean Water Act jurisdictional analysis using the Rapanos Guidance.

HBG is seeking, on behalf of DXE, a Verified Jurisdictional Determination pursuant to applicable Corps guidance documents.

1.2 Contact Information

Project Owner Contact	***Applicant's Agent & Wetland Regulatory Scientist***
DesertXpress Enterprises, LLC 6750 Via Austi Parkway Suite 250 Las Vegas, NV 89119 ***Contact:*** Tom Stone (702) 491-8940 tstone@transmaxgroup.com	**Huffman-Broadway Group, Inc** 828 Mission Avenue San Rafael, California 94901 ***Contact:*** Terry Huffman, Ph.D. (415) 925-2000 thuffman@h-bgroup.com

1.3 Study Area

The Study Area for this investigation is defined as the area where potential ground disturbing components of the proposed project would occur based on the alternatives identified and analyzed in conjunction with the EIS and Supplemental EIS prepared for the DesertXpress Project. The Study Area encompasses the eastern portion of the DesertXpress Project route Segment 3 Alternative 3B from Halloran Summit to Mountain Pass in San Bernardino County, California (Exhibit A, Figure 3). This portion of DesertXpress Project Segment 3 Alternative 3B comprises approximately 15.1 miles within the I-15 right of way on the north side of the freeway.

1.4 Environmental Setting

The Study Area encompasses those portions of the proposed DesertXpress Project alignment alternative and facilities in and adjacent to the north freeway right of way that lie within the following five HUC-12 sub-watersheds (Exhibit A, Figure 4):

- Halloran Summit
- Rock Tank
- Pachalka Spring-Kingston Wash
- Ord Tank
- Piute Valley

These HUC-12 watersheds are at the southeast boundary of the larger (HUC-8) Death Valley-Lower Amargosa Watershed (HUC 18090203). Seasonal runoff from these HUC-12 watersheds collects in Kingston Wash, just north of I-15 in the Shadow Valley. Kingston Wash flows to its confluence with Salt Creek; Salt Creek flows generally west and north to the Amargosa River west of the Salt Spring Hills and Little Dumont Dunes. Here, the Amargosa flows into Death Valley and terminates in Badwater Basin, an isolated dry lake that is the lowest point on the landscape. All these waters are ephemeral.

1.4.1 Topography

The study area is within the Mojave Desert Geomorphic Province. The Mojave Desert Geomorphic Province is characterized by mountain ranges and hills of moderate relief that are partially buried and separated by broad alluviated basins.

Maximum elevations in the Study Area range from approximately 4,000 feet MSL at Halloran Summit at the west end of the Study Area to 4,730 feet MSL at Mountain Pass at the east end of the Study Area. Lowest elevation is approximately 3,700 feet MSL in the basin between the summits.

1.4.2 Land Use

This section of the DesertXpress route falls within the I-15 transportation corridor. On the south side of I-15, BLM owns an approximately half-mile buffer strip, with Mojave National Preserve, a designated national park unit, adjacent to the south, except in the Mountain Pass area where BLM holds a larger area.

On the north side of the freeway along most of this portion of the route, BLM is the landowner, with land designated as part of the Shadow Valley Desert Wildlife Management Area from near Halloran Springs Road in T15N, R10E eastward through Section 17, T16N, 13E. At Mountain Pass, Molycorp Minerals' Mountain Pass Mine produces high quality rare earth oxides, including cerium, lanthanum, neodymium, praseodymium and europium, for clean energy technologies, advanced water filtration systems, and national defense on BLM land.

1.4.3 Geology and Soils

Halloran Summit

The Halloran Summit area comprises a large body of Tertiary-Mesozoic age granitic rock (gr, TKq) that is overlain by younger Pleistocene age volcanic basalt flows (Qpv, Qeb). The granitic rock body is intruded into an older, Precambrian metamorphic rock unit composed of gneiss (epЄ, pЄg) on the west side of the Halloran Summit. Segment 3 Alternative 3B is underlain by the gneissic rock and younger alluvium (Qal) on the west side of the summit. Younger alluvium is mapped at the Halloran Summit pass but is underlain at relatively shallow depth by granitic and/or volcanic rock. The inactive Halloran fault runs parallel to I-15 in this area.

Halloran Summit – Mountain Pass

In the Shadow Valley between Halloran Summit and Mountain Pass, Segment 3 Alternative 3B would be underlain by younger valley and fan alluvium (Qal). A small exposure of Paleozoic age dolomite (IP/ls, DЄg, DЄgb1) is on the southwest side of Shadow Valley, and younger lacustrine deposits (Ql) from the Valley Wells lake bed are on the valley bottom. Ascending from Shadow Valley up to Mountain Pass, the segment crosses Pliocene-Pleistocene non-marine sediments (Qc, Qoa) that are along the base of the Mescal Range and Clark Mountain Range that comprise the Mountain Pass area.

These geologic units and associated soils are described below:

Geologic Unit (Symbol[s])	Geologic Age	Description - Soils
Younger alluvial valley and fan sediments (Qal)	Holocene	Unconsolidated valley alluvial deposits of silt, sand, and gravel; alluvial fan deposits.
Younger lacustrine deposits (Ql)	Holocene	Lake and playa sediments including clay, silt, and fine sand; Soda Lake bed sediments.
Older alluvial deposits (Qc, Qoa)	Pleistocene And Plio-Pleistocene	Dissected alluvial gravel, sand, and silt; continental terrace deposits of gravel, sand, silt, and clay.
Marine sedimentary and meta-sedimentary rocks (CM)	Paleozoic - Mississippian	Limestone and dolomite; includes Monte Cristo limestone of Hewett, 1956.
Marine sedimentary and meta-sedimentary rocks (Ds, Dsi)	Paleozoic – Devonian	Sultan limestone of Hewett, 1956, including ironside Dolomite members.
Marine sedimentary and meta-sedimentary rocks (IP/ls, Dєg, Dєgu, Dєgb$_1$)	Paleozoic – Cambrian And Devonian	Dolomite and Limestone with thin interbedded Shale and Sandstone; Goodsprings Dolomite and Carbonate Rocks including Breccia of Hewett, 1956.
Metamorphic rocks (epє, pєg, pєga, pєgc pєgb)	Precambrian	Undifferentiated injection gneiss, schist, granitic gneiss, granite augen gneiss complex.
Granitic rocks (pєgr)	Precambrian	Undivided syenite, shonkite, granite stocks, and dikes, including carbonate veins and irregular bodies in Mountain Pass area.

1.4.4 Biological Resources

In the Shadow Valley between Halloran Summit and Mountain Pass, the Study Area crosses disturbed habitats, creosote bush scrub, and saltbush scrub. Joshua tree woodland vegetation occurs between 2,500 and 4,500 feet in areas that receive 6 to 15 inches of rain a year; it has been mapped within the DesertXpress route between Halloran summit and Cima Road and between Cima Road and Mountain Pass. Mesquite bosque habitat has been mapped at Mountain Pass. The entire Mojave Desert is potential desert tortoise habitat. The following is a list of biological resources in the Study Area.

Biological Resources in the Study Area & Vicinity			
Biological Resource	**Federal/State/ BLM/HCPStatus**	**Description**	**Potential for Occurrence**
Special-Status Plant Species			
Rusby's desert-mallow	–/–/S/NE	One California Natural Diversity Data Base (CNDDB) occurrence 1.5 miles north of project study area at Kingston Wash.	Yes
Desert pincushion	–/–/–/–	CNDDB occurrences adjacent to alignment at Kingston Wash and at west end of Mountain Pass.	Yes
Hairy erioneuron	–/–/–/–	One CNDDB occurrence approximately one mile south of project study area at west end of Mountain Pass.	Yes
Aven Nelson's phacelia	–/–/–/–	One CNDDB occurrence adjacent to alignment at Mountain Pass.	Yes
Scaly cloak fern	–/–/–/NE	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Mormon needle grass	–/–/–/–	CNDDB occurrences on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Nine-awned pappus grass	–/–/–/NE	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Wright's bedstraw	–/–/S/NE	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Clark Mountain spurge	–/–/–/–	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Gilman's cymopterus	–/–/–/NE	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Sky-blue phacelia	–/–/–/–	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Chamber's physaria	–/–/–/–	One CNDDB occurrence on southern edge of Clark Mountain north of alignment at Mountain Pass.	Yes
Special-Status Wildlife Species			
Saratoga Springs pupfish	--/SSC/--/--	CNDDB occurrence within 10 miles of project study area. No suitable habitat in project study area.	No
Banded Gila Monster	--/SSC/S/W, NE	No CNDDB occurrences within 10 miles of project study area. Suitable habitat occurs in rocky habitat	Yes
Desert tortoise	T/T/--/W, NE	Desert tortoises observed during 2007 surveys. Suitable habitat occurs in washes crossed by I-15.	Yes

Biological Resources in the Study Area & Vicinity			
Biological Resource	**Federal/State/ BLM/HCPStatus**	**Description**	**Potential for Occurrence**
Bendire's thrasher	--/SSC/S/W, NE	Several CNDDB occurrences in project study area. Suitable habitat in Joshua tree woodland.	Yes
Crissal thrasher	--/SSC/--/NE	No CNDDB occurrences within 10 miles of project study area. Suitable habitat in larger washes.	Yes
Golden Eagle	PR/SSC,FP/--/NE	No CNDDB occurrences within 10 miles of project study area. Suitable nesting habitat in rocky habitat	Yes
Le Conte's thrasher	--/SSC/--/W, NE	No CNDDB occurrences within project study area. Suitable habitat throughout project study area in desert scrub communities.	Yes
Prairie falcon	--/SSC/--/NE	No CNDDB occurrences within 10 miles of project study area. Suitable nesting habitat in rocky habitat.	Yes
Western burrowing owl	--/SSC/S/W, NE	No occurrences within 10 miles of project study area. Suitable habitat occurs throughout project study area in desert scrub and agricultural habitats.	Yes
Desert bighorn sheep	--/ FP/S/W, NE	CNDDB records indicate suitable habitat within 10 miles of project study area. Suitable habitat does occur within project study area.	Yes
Hoary bat	--/SSC/--/--	One CNDDB occurrence within 10 miles of project study area. No suitable roosting habitat n project study area.	No
Townsend's big-eared bat	--/SSC/S/W, NE	One CNDDB occurrence within 10 miles of project study area. Suitable roosting habitat in project study area.	Yes

1.4.5 Climate

The Mojave Desert has an arid to semi-arid climate; the area is in the rain shadow of 5,000 to 11,000-foot high mountains west of the area. About 2/3 of average annual precipitation occurs between November and March, when winter storms move east from the Pacific Ocean. Precipitation amounts are higher in the mountains, ranging from about 4 inches annually in lower areas, with precipitation over 12 inches annually in the highest elevations. In the higher mountains, winter precipitation may occur as snow. Precipitation in the summer comes as short, intense, and localized thunderstorms; much of this rain is lost to evapotranspiration, particularly if the storm is a small one. The farther east in the Mojave, summer storms are more frequent, as they arrive from Arizona to the south. (NPS 1999). Annual precipitation ranges from 5 to 10 inches.

1.4.6 Hydrology

Surface water

Ephemeral seasonal runoff from the HUC-12 watersheds in this portion of the DesertXpress route drain north to Kingston Wash just north of I-15 in the Shadow Valley. These watersheds comprise a portion of the larger (HUC-8) Death Valley-Lower

Amargosa Watershed (HUC 18090203). Kingston Wash flows to Salt Creek; Salt Creek flows generally west and north to the Amargosa River, and the Amargosa flows into Death Valley, terminating in Badwater Basin.

Groundwater

Upper Kingston Valley Groundwater Basin (DWR Basin 6-22) is bounded by the Mesquite Mountains on the north, the Ivanpah and Clark mountains on the east, the Shadow Mountains on the west, and Teutonia Peak on the south. The basin underlies a northwest-trending valley. Kingston Wash is in the northwest part of the basin at an elevation of approximately 3,000 feet msl. The principal water-bearing unit in the basin is Quaternary alluvium having a maximum thickness of at least 400 feet. Replenishment of the basin is chiefly from the percolation of runoff through alluvial fan deposits at the base of the Ivanpah and Clark mountains. Groundwater in the younger and underlying older alluvium moves northward towards Kingston Wash and probably discharges as subsurface outflow to the Valjean Valley

1.5 Disclaimer

Huffman-Broadway Group, Inc. has conducted a thorough historical review and site investigation and made a good-faith effort herein to thoroughly describe and document the presence of potential factors that the Corps may consider in determining jurisdiction under their CWA jurisdiction as part of the Corps jurisdictional verification / determination process, however, DXE reserves the right to challenge or seek revision to any areas over which the Corps may assert jurisdiction.

2.0 REGULATORY FRAMEWORK

2.1 Definition of Wetlands and Other Waters of the U.S.

Section 404 of the Federal Clean Water Act authorizes the Corps to regulate activities that discharge dredged or fill material to wetlands and other waters of the United States. As described by EPA's and the Corps' regulations (40 CFR § 230.3(s) and 33 CFR § 328.3(a), respectively), the term "waters of the United States" encompasses the following resources:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purpose by industries in interstate commerce

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

EPA and the Corps define wetlands as:

> …those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (EPA regulations at 40 CFR § 230.3(t); Corps regulations at 33 CFR § 328.3(b)).

2.2 Limits of Jurisdiction

The following provides the regulatory definitions and criteria followed in determining the geographic extent of potential EPA/Corps jurisdiction as applicable to inland waters.

The geographic limits of relevant federal jurisdiction for non-tidal waters of the U.S. are defined as follows at 33 CFR § 328.4(c):

> *Non-Tidal Waters of the United States*: The limits of jurisdiction in non-tidal waters:
>
> (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark.
>
> (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
>
> (3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

The terms "adjacent" and "ordinary high water mark," used in the above definition, are defined at 33 CFR § 328.3 as follows:

> The term *adjacent* means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands." (33 CFR § 328.3(c))
>
> The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas. (33 CFR § 328.3(e))

A site must meet certain water, soil, and vegetation criteria to qualify as a jurisdictional wetland. The Corps' 1987 *Wetlands Delineation Manual* and various regional supplements describe these criteria and the methods used to determine whether they are met and the geographic extent of wetland areas identified in the field.

2.3 Identification of Ordinary High Water Marks (OHWM)

The Corps definition of Ordinary High Water Mark (OHWM) provides the criterion by which the OHWM line can be identified which consists of "*that line on the shore established by fluctuations of water and indirect physical characteristics*" (33 CFR § 328.3(e)). The Corps has developed a delineation manual for the identification of OHWMs within the Arid West Region, entitled *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual* (Lichvar and McColley 2008). Tables 1a and 1b, below provide a summarized listing from the manual of indicators associated with areas that become flood or ponded, but are not dominated by wetland vegetation and the duration of

flooding, ponding and/or near surface soil saturation (≤12 inches) is not sufficient to cause hydric soils to form or wetland hydrology conditions to occur.

Table 1a. Potential Geomorphic Indicators of Ordinary High Water Marks for the Arid West *

Potential Geomorphic OHWM Indicators		
(A) Below OHW	**(B) At OHW**	**(C) Above OHW**
1. In-stream dunes 2. Crested ripples 3. Flaser bedding 4. Harrow marks 5. Gravel sheets to rippled sands 6. Meander bars 7. Sand tongues 8. Muddy point bars 9. Long gravel bars 10. Cobble bars behind obstructions 11. Scour holes downstream of obstructions 12. Obstacle marks 13. Stepped-bed morphology in gravel 14. Narrow berms and levees 15. Streaming lineations 16. Dessication / mud cracks 17. Armored mud balls 18. Knick Points	1. Valley flat 2. Active floodplain 3. Benches: low, mid, most prominent 4. Highest surface of channel bars 5. Top of point bars 6. Break in bank slope 7. Upper limit of sand-sized particles 8. Change in particle size distribution 9. Staining of rocks 10. Exposed root hairs below intact soil layer 11. Silt deposits 12. Litter (organic debris, small twigs and leaves) 13. Drift (organic debris, larger than twigs)	1. Desert pavement 2. Rock varnish 3. Clast weathering 4. Salt splitting 5. Carbonate etching 6. Depositional topography 7. Caliche rubble 8. Soil development 9. Surface color/tone 10. Drainage development 11. Surface relief 12. Surface rounding

* Adapted from *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual* (Lichvar and McColley 2008).

Table 1b. Potential Vegetation Indicators of Ordinary High Water Marks for the Arid West *

Potential Vegetation OHWM Indicators			
	(D) Below OHW	**(E) At OHW**	**(F) Above OHW**
Hydroriparian indicators	1. Herbaceous marsh species 2. Pioneer tree seedlings 3. Sparse, low vegetation 4. Annual herbs, hydromesic ruderals 5. Perennial herbs, hydromesic clonals	1. Annual herbs, hydromesic ruderals 2. Perennial herbs, hydromesic clonals 3. Pioneer tree seedlings 4. Pioneer tree saplings	1. Annual herbs, xeric ruderals 2. Perennial herbs, non-clonal 3. Perennial herbs, clonal and non-clonal co-dominant 4. Mature pioneer trees, no young trees 5. Mature pioneer trees w/upland species 6. Late-successional species
Mesoriparian indicators	6. Pioneer tree seedlings 7. Sparse, low vegetation 8. Pioneer tree saplings 9. Xeroriparian species	5. Sparse, low vegetation Annual herbs, hydromesic 6. ruderals 7. Perennial herbs, hydromesic clonals 8. Pioneer tree seedlings 9. Pioneer tree saplings 10. Xeroriparian species 11. Annual herbs, xeric ruderals	7. Xeroriparian species 8. Annual herbs, xeric ruderals 9. Perennial herbs, non-clonal 10. Perennial herbs, clonal and non-clonal codominent 11. Mature pioneer trees, no young trees 12. Mature pioneer trees, xeric understory 13. Mature pioneer trees w/upland species 14. Late-successional species 15. Upland species
Xeroriparian indicators	10. Sparse, low vegetation 11. Xeroriparian species 12. Annual herbs, xeric ruderals	12. Sparse, low vegetation 13. Xeroriparian species 14. Annual herbs, xeric ruderals	16. Annual herbs, xeric ruderals 17. Mature pioneer trees w/upland species 18. Upland species

* Adapted from *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual* (Lichvar and McColley 2008).

2.4 Wetlands Delineation Criteria

The Corps' 1987 *Wetlands Delineation Manual* identifies the key diagnostic criteria for determining the presence of wetlands. These include:

1. Wetland Hydrology: Inundation or saturation to the surface during the growing season.
2. Hydric Soils: Soils classified as hydric or that possess characteristics associated with reducing soil conditions.
3. Predominance of Wetland Vegetation: Vegetation classified as facultative, facultative wet, or obligate according to its tolerance of saturated (i.e., anaerobic) soil conditions.

Specific criteria used to determine the presence or absence of wetland hydrology, soil, and vegetation conditions are described in the sections below.

2.4.1 Wetland Hydrology

The 1987 Corps *Manual* states that wetland hydrology conditions occur when a "site is inundated either permanently or periodically at mean water depths less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation." Whether a site meets either of these criteria is determined by the presence of diagnostic indicators of wetland hydrology, which include those listed in Table 2.

Table 2. Wetland Hydrology Indicators
(Based on 1987 Corps Manual and Corps Guidance Documents)

Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Drift Lines	Water-Stained Leaves
Water-Borne Sediment Deposits	FAC-Neutral Test
Drainage Patterns Within Wetlands	Local Soil Survey Data

A March 8, 1992, Corps memorandum entitled *Clarification and Interpretation of the 1987 Manual* provides further clarification:

> Areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days for more than 12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas wet between 5 percent and 12.5 percent of the growing season in most years may or may not be wetlands. Sites saturated to the surface for less than 5 percent of the growing season are non-wetlands.

Wetland hydrology indicators have also been further defined and described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008). These indicators are similar to the indicators listed above from the 1987 Corps *Manual* and are presented in Table 3.

Table 3. Wetland Hydrology Indicators for the Arid West

(Based on Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0)

	Primary Indicators (*any one indicator is sufficient to make a determination that wetland hydrology is present*)	**Secondary Indicators** (*two or more indicators are required to make a determination that wetland hydrology is present*)
Group A – Observation of Surface Water or Saturated Soils		
A1* – Surface Water	**X**	
A2 – High Water Table	**X**	
A3 – Saturation	**X**	
Group B – Evidence of Recent Inundation		
B1 – Water Marks	**X** (Nonriverine)	**X** (Riverine)
B2 – Sediment Deposits	**X** (Nonriverine)	**X** (Riverine)
B3 – Drift Deposits	**X** (Nonriverine)	**X** (Riverine)
B6 – Surface Soil Cracks	**X**	
B7 – Inundation Visible on Aerial Imagery	**X**	
B9 –Water-Stained Leaves	**X**	
B10 – Drainage		**X**
B11 – Salt Crust	**X**	
B12 – Biotic Crust	**X**	
B13 – Aquatic Invertebrates	**X**	
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen Sulfide Odor	**X**	
C2 – Dry-Season Water Table		**X**
C3 – Oxidized Rhizospheres along Living Roots	**X**	
C4 – Presence of Reduced Iron	**X**	
C6 – Recent Iron Reduction in Tilled Soils	**X**	
C7 – Thin Muck Surface	**X**	
C8 – Crayfish Burrows		**X**

Table 3. Wetland Hydrology Indicators for the Arid West (Based on Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0)		
	Primary Indicators (*any one indicator is sufficient to make a determination that wetland hydrology is present*)	**Secondary Indicators** (*two or more indicators are required to make a determination that wetland hydrology is present*)
C9 – Saturation Visible on Aerial Imagery		**X**
Group D – Evidence from Other Site Conditions or Data		
D3 – Shallow Aquitard		**X**
D5 – FAC-Neutral Test		**X**
***** Denotes number of wetland hydrology indicator described in detail in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).*		

2.4.2 Hydric Soils

The 1987 Corps *Manual* states that the diagnostic environmental characteristics indicative of wetland soil conditions are met when "soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions." According to the Manual, indicators of soils developed under reducing conditions may include:

1. Organic soils (Histosols);
2. Histic epipedons;
3. Sulfidic material;
4. Aquic or peraquic moisture regime;
5. Reducing soil conditions;
6. Soil colors (chroma of 2 or less);
7. Soil appearing on hydric soils list; and
8. Iron and manganese concretions.

A February 20, 1992, Corps memorandum entitled *Regional Interpretation of the 1987 Manual* states that the most recent version of National Technical Committee for Hydric Soils (NTCHS) hydric soil criteria will be used (to make hydric soil determinations). These soil criteria specify at least 15 consecutive days of saturation or 7 days of inundation (flooding or ponding) during the growing season in most years.

The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Soils that are sufficiently wet because of artificial measures are included in the concept of hydric soils. Also, soils in which the hydrology has been artificially modified are hydric if the soil, in an unaltered state, was hydric. Some series, designated as hydric, have phases that are not hydric depending on water table, flooding, and ponding characteristics. As indicated above, like the NRCS, the Corps has typically accepted guidance for the identification of hydric soils developed by the National Technical Committee for Hydric Soils (NTCHS). The

NTCHS, a working group organized by NRCS, has developed criteria for identifying and mapping hydric soils throughout the United States and defines a hydric soil as "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part [of the soil profile]" (http://soils.usda.gov/use/hydric/intro.html). The most recent (2000) version of the NTCHS hydric soils criteria identifies those soils that are likely to meet this definition. These criteria, which are accepted by most state and federal agencies, are as follows (http://soils.usda.gov/use/hydric/criteria.html):

1. All Histels except Folistels and Histosols except Folists, or
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Andic, Vitrandic, and Pachic subgroups, or Cumulic subgroups that are:
    a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or
    b. poorly drained or very poorly drained and have either:
        (i.) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils,
        (ii.) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or
        (iii.) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or
3. Soils that are frequently ponded for a long duration or a very long duration (7 to 30 days) during the growing season, or
4. Soils that are frequently flooded for a long duration or a very long duration (7 to 30 days) during the growing season.

On the basis of computer database searches for soils meeting the second criterion, NRCS has developed hydric soils lists for many parts of the country. Although they are useful for determining whether a particular soil series *has the potential to support current hydric soil conditions*, caution should be used when using these lists for site-specific hydric soil determinations. Many soils on the lists have ranges in water table depths and other characteristics that allow them to be either hydric or nonhydric depending on landscape position and other site-specific factors (e.g., soil clay content, depth to bedrock). Accordingly, hydric soils lists are good ancillary tools to facilitate wetland determinations, but are not a substitute for onsite investigations.

Field indicators of hydric soils are morphological properties known to be associated with soils that meet the definition of a hydric soil. Presence of one or more field indicators suggests that processes associated with hydric soil formation have taken place on the site being observed. The field indicators are essential for hydric soil identification because

once formed, they persist in the soil during both wet and dry seasonal periods. However, few hydric soil indicators identify soils at a site as being currently hydric in accordance with the NTCHS hydric soils criteria described above. Field indicators of hydric soil conditions are listed in Table 4:

Table 4. Field Indicators of Hydric Soil Conditions
(Based on 1987 Corps Manual and Corps Guidance Documents)

1. Indicators of Historical Hydric Soil Conditions:	**2. Indicators of Current Hydric Soil Conditions:**
a. Histosols b. Histic epipedons; c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix d. High organic content in surface of sandy soils e. Organic streaking in sandy soils f. Iron and manganese concretions g. Soil listed on county hydric soils list	a. Aquic or peraquic moisture regime (inundation and/or soil saturation for ≥7 continuous days) b. Reducing soil conditions (inundation and/or soil saturation for ≥ 7 continuous days) c. Sulfidic material (rotten egg smell)

The presence of one or more of the field indicators in "1 a, b, c, and/or d" above suggests that historical processes associated with hydric soil development have taken place at a given site. These indicators are useful in determining if soils at a site were historically formed under hydric soil conditions because the indicators persist in soils during both wet and dry periods and may remain for decades and even centuries after changes in site conditions occur that inhibit subsequent wetland development, such as the elimination of wetland hydrology (NRCS 1995). However, only the presence of field indicators "2 a, b, and/or c" confirms that hydric soils occur at a site during the period of observation.

Hydric soil indicators have also been further defined and described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008). These indicators are similar to those listed above from the 1987 Corps *Manual* and are presented below in Table 5.

Table 5. Hydric Soil Indicators for the Arid West
(Based on Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0)

Hydric Soil Indicators			Hydric Soil Indicators for Problem Soils**
All Soils	**Sandy Soils**	**Loamy & Clayey Soils**	
A1* – Histosol	S1 – Sandy Mucky Mineral	F1 – Loamy Mucky Mineral	A9 – 1 cm Muck
A2 – Histic Epipedon	S4 – Sandy Gleyed Matrix	F2 – Loamy Gleyed Matrix	A10 – 2 cm Muck
A3 – Black Histic	S5 – Sandy Redox	F3 – Depleted Matrix	F18 – Reduced Vertic
A4 – Hydrogen Sulfide	S6 – Stripped Matrix	F6 – Redox Dark Surface	TF2 – Red Parent Material
A5 – Stratified Layers	--	F7 – Depleted Dark Surface	Other (See Section 5 of the Regional Supplement, Version 2.0)--
A9 – 1 cm Muck	--	F8 – Redox Depressions	--
A11 – Depleted Below Dark Surface	--	F9 – Vernal Pools	--
A12 – Thick Dark Surface	--	--	--

***** Denotes number of hydric soil indicator described in detail in *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).*
****** Indicators of hydrophytic vegetation and wetland hydrology must be present.

It should also be noted for problematic areas that the 2008 Corps Regional Supplement specifies 14 days continuous ponding as an acceptable indicator of problematic hydric soils (USACE 2008, p. 101).

2.4.3 Prevalence of Wetland Vegetation

Species Classifications

Species classifications (e.g., tolerance of anaerobic soil conditions) are determined by consulting the *National List of Plant Species that Occur in Wetlands* (Reed 1988) and the relevant regional lists, which are published by FWS' National Wetlands Inventory (NWI). Regional Interagency Review Panels develop the lists by determining species' estimated probability of occurrence in wetlands vs. non-wetlands. Classifications are made by unanimous agreement of the Panel. If the Panel is unable to reach a unanimous decision on the status of a species, "no agreement" (NA) is recorded. If insufficient information exists to determine the status of a species, "no indicator" (NI) is recorded. Species that are not included in the NWI list are assigned a "not listed" (NL) designation in this report.

The resulting NWI lists include plants that grow in a range of soil conditions from permanently wet to dry. Species are divided into the following "indicator categories:"

1. **"Obligate wetland" (OBL)** species, which, under natural conditions, occur almost always in wetlands (estimated probability >99 percent);
2. **"Facultative wetland" (FACW)** species, which usually occur in wetlands (estimated probability 67 – 99 percent), but are occasionally found in non-wetlands;
3. **"Facultative" (FAC)** species, which are equally likely to occur in wetlands or non-wetlands (estimated probability 34 – 66 percent);
4. **"Facultative upland" (FACU)** species, which sometimes occur in wetlands (estimated probability 1 – 33 percent), but more often occur in non-wetlands; and
5. **"Obligate upland" (UPL)** species, which occur in wetlands in other regions, but, under natural conditions, occur almost always in non-wetlands in the region specified (estimated probability >99 percent).

Species that have an indicator status of OBL, FACW, and FAC are typically considered to be adapted for life in anaerobic soil conditions (Corps 1987) and are used as evidence of hydrophytic vegetation when they dominate plant community composition or cover. Despite widespread use of the lists for wetland delineations, it is important to note that wetland indicator species assignments are not based on the results of a statistical analysis of species occurrence. The indicator assignments are approximations of wetland affinity based on a synthesis of submitted review comments, published botanical literature, and the field experience of the members of the Interagency Review Panel. For this reason and because many plants have properties that enable them to occur in a range of microhabitats (i.e., wetlands and non-wetlands), the presence of wetland indicator species is not unequivocal evidence of the presence of wetland hydrology and hydric soils. A positive indicator or indicators of wetlands should be emphasized, such as an assemblage of plants that can only be considered "hydrophytes" when they are growing in water or partly drained hydric soils (not effectively drained hydric soils) (Corps 1987). From the FWS perspective, all species on the NWI plant lists are hydrophytes at one time or another and the wetland indicator status (OBL, FACW, FAC, or FACU) reflects the likelihood that a given individual of a species is a hydrophyte or a certain population of these plants is hydrophytic. While OBL and FACW species are the most reliable plant indicators of wetlands, FAC and FACU species also contain populations of hydrophytes (Tiner 2006).

For the reasons stated above, the 1987 Corps *Manual* does not solely rely on the presence of hydrophytic vegetation to make wetland determinations.

Hydrophytic Vegetation Definitions

The Corps' 1987 *Manual* states that the wetland vegetation conditions are met when the prevalent vegetation (i.e., more than 50 percent of vegetation cover or tree basal area) consists of macrophytes that are typically adapted to sites having wetland hydrologic and soil conditions (e.g., periodic or continuous inundation or soil saturation). Hydrophytic vegetation is defined as "plant life growing in water or on a substrate that is at least

periodically deficient in oxygen as a result of excessive water content" (Cowardin *et al*. 1979). Hydrophytic vegetative species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Positive indicators of the presence of hydrophytic vegetation include:

1. More than 50 percent of the dominant species are rated as Obligate ("OBL"), Facultative Wet ("FACW"), or Facultative ("FAC") on lists of plant species that occur in wetlands (see Reed 1988 for California);
2. Visual observations of plant species growing in sites of prolonged inundation or soil saturation; and
3. Reports in the technical literature indicating the prevalent vegetation is commonly found in saturated soils.

Hydrophytic vegetation indicators have been further defined and described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008). These indicators include:

1. Dominance Test. More than 50 percent of the dominant plant species across all strata are rated OBL, FACW, or FAC.
2. Prevalence Index. The prevalence index is 3.0 or less with indicators of hydric soils and wetland hydrology being present.
3. Morphological Adaptations. The plant community passes either the dominance test or the prevalence index after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands.

3.0 DELINEATION METHOD

This study was conducted in accordance with Code of Federal Regulations (CFR) definitions of jurisdictional waters, the Corps' 1987 *Wetlands Delineation Manual*, the Corps' 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual,* and supporting guidance documents. The following provides an overview of the objective of the delineation approach, how the Study Area is defined, and the methods used to identify and map (delineate) areas potentially subject to Corps jurisdiction under Section 404 of the CWA.

3.1 Objective and Establishment of Study Area Boundary

The objective of this investigation is to identify and map areas potentially meeting the Clean Water Act definition of wetlands and Other Waters of the United States within the potential impact footprint of the DesertXpress Project. This impact footprint, which is encompassed within the Study Area, includes the proposed alignment and any alternative alignment and support facilities such as passenger stations and operations and maintenance facilities (e.g., maintenance yard, power substations, and transmission lines). Temporary construction areas for equipment and materials laydown, new access roads, and borrow areas are also included within the Study Area. The boundary of the Study Area also represents a slightly larger area (increased alignment and facility ROW width by an average of 200 feet) to accommodate potential minor changes in the impact footprint.

3.2 Study Area Reconnaissance

Prior to initiating detailed field survey work, existing land forms within the Study Area that may potentially contain wetlands or other waters of the United States were identified by conducting vehicle and pedestrian on-site reconnaissance inspections during the month of April 2010 in conjunction with review of the following information:

- Aerial photography and satellite imagery of the area;
- USGS topographic mapping;
- NRCS soils mapping;
- Engineer scale topographic mapping of segment alternatives
- USGS National Hydrology Dataset; and
- Preliminary level vegetation mapping and wetland / OHWM data collection efforts conducted during February and March 2008 and September and October 2009 as part of an on-going Federal EIS process by the FRA's EIS contractor.

The above efforts led to the development, in coordination with Corps regulatory staff, and use of the project-specific methods described below.

3.3 Wetlands Identification and Delineation

Field surveys designed to identify the presence or absence of field indicators of wetland vegetation, soils and hydrology conditions were conducted within low-lying landscape features where wetlands could potentially occur. These field surveys were conducted during the months of April, May, and June 2010 after the detailed methodology was reviewed and approved by Corps staff during May 2010.

3.3.1 Dominance of Wetland Vegetation

Presence or absence of a dominance of wetland vegetation / hydrophytes within the Study Area was evaluated using the methodology described in Sections 2.2 and 2.4.3. Indicator status of plants was confirmed by referring to the *National List of Plant Species that Occur in Wetlands: 1988 National Summary* (Reed). Plant cover data were collected for individual species associated within and immediately adjacent to the landscape features identified during the site reconnaissance survey as having the potential to meet the Corps' technical criteria for wetlands. Plant cover was visually estimated within 3-foot diameter plots at each soil sample location described below and was recorded on a Corps Wetland Determination Data Form – Arid West Region. Copies of completed data forms are provided in Exhibit B2. Subsequently, field data were analyzed to assess whether 50 percent or greater of the dominant species within the area sampled are hydrophytes. Sites that are depressional landforms that do not have a dominance of wetland vegetation forming at least 5 percent cover were not considered to be dominated by hydrophytes and were classified as a potential "other water of the United States" following the methodology described in Section 3.4, below, except if conditions for problematic vegetation were met as described in the Corps' 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).*

3.3.2 Presence of Hydric Soil Indicators

The presence or absence of hydric soil field indicators was evaluated following the methodology described in Section 2.3.2 using the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008). At each potential wetland sampling location within the Study Area, hand-dug soil pits were excavated to a minimum of 20 inches or until a limiting layer or standing water is reached. The presence or absence of hydric soil indicators found at each soil pit location was recorded on a Corps Wetland Determination Data Form – Arid West Region. Copies of completed data forms are provided in Exhibit B. For sampling locations where the possibility of problematic hydric soils is found, procedures for the identification of problematic hydric soils as defined by the above described publication were followed.

3.3.3 Presence of Wetland Hydrology Indicators

The presence or absence of wetland hydrology field indicators were assessed following the methodology described in Section 2.3.1 using the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Corps 2008). The presence or absence of wetland hydrology indicators at each soil pit location was recorded on a Corps Wetland Determination Data Form – Arid West Region. Copies of completed data forms are provided in Exhibit B. For sampling locations where the

possibility of problematic hydrology indicators was found, procedures for the identification of problematic hydrology indicators, as defined by the above-described publication, were followed.

3.4 Identification and Delineation of Other Waters

Field surveys designed to identify the presence or absence of field indicators of an ordinary high water mark (OHWM) were conducted within low-lying landscape features where other waters of the United States could potentially occur. These field surveys were conducted during the months of April, May, and June 2010.

HBG identified drainages within each watershed that potentially met the Corps technical criteria for Other Waters of the United States (presence of field indicators of active surface water flow and associated Ordinary High Water Mark [OHWM]) using the following approach based on *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual*.

Initial efforts involved identification of all drainages within the Study Area having the potential for active surface flow. This was accomplished through field reconnaissance and imagery interpretation. Detailed sampling was then conducted to identify and delineated active drainages with an OHWM. This was accomplished by randomly sampling the identified drainages in a stratified manner by geographically dividing the Study Area into HUC 12 watershed units.

Field sampling within each HUC 12 watershed consisted of gathering OHWM data, including the measured width of the OHWM, for 3 to 5 main drainages (> 3 feet), if present, selected at random; and 6 to 10 (depending on watershed size) random samples of minor drainages (≤ 3 feet), if present. Each of the HCC 12 watersheds located within the Study Area was divided into approximate thirds. Then a minimum of, one major drainage and two minor drainages, if present, were sampled within each third of a watershed. Where the length of the watershed along the proposed DesertXpress Project alignment alternative was less than 5 miles, the watershed was divided into approximate halves, instead. If the minor drainages (≤ 3 feet) occurring within each one-third watershed varied in OHWM width by more than 33 percent, sampling was increased in that third of the watershed.

Drainage data for each of the watershed drainages sampled was collected on a standardized field data sheet (Exhibit B). Exhibit A, Figures 5-12 provide examples of the types of field indicators observed within various drainages located along the DesertXpress Project alternative alignments. Each field sampling point was memorialized using a handheld GPS unit with submeter accuracy. Where stormwater flows originated upslope of the side of I-15 opposite the alignment, those drainages were hydrologically cut off by the freeway during construction and channeled into detention basins and / or manmade drainages on that side of I-15. As a consequence, drainages on the proposed alignment side of I-15 were hydrologically cut off from their sources and no

longer technically meet the Corps OHWM criterion. This condition was noted on the field data sheets. Detailed OHWM indicator data for these historical drainage features was not collected.

All drainage data (field and photointerpreted drainage data) are summarized by HUC 12 watershed on the required LA District Excel JD Summary Data Sheet (see Exhibit B). Widths for active drainages identified through photointerpretation are based on an average width calculated from field data. The length of each drainage is based on photointerpretation. Standardized field data sheets, Corps Summary Data Sheets and representative photographs of various drainage features, and are provided in Exhibit B. The field data collected from each watershed was used to aid in the imagery interpretation process described in Section 3.5, below.

3.5 Mapping

Wetland indicator data sample locations and the locations of areas identified during field surveys that are potentially Other Waters of the United States due to the presence of an OHWM were mapped using a hand-held Trimble XT global positioning system (GPS) unit with sub-meter accuracy. This GPS data was incorporated into a Geographic Information System (GIS) and geo-referenced in overlay fashion onto digital orthorectified satellite imagery and/or high resolution aerial photograph depending on availability. Overlays were used to assist in analysis, identification, and digitization of the location and geographic extent of areas that could potentially qualify as waters of the United States. The imagery interpretation process involved the combined use of available imagery, field data, engineer level topographic mapping, field verification of mapped features and best professional judgment to map the geographic extent of areas potentially subject to Corps CWA jurisdiction. Exhibit C presents representative detailed mapping within the Study Area with field sampling points and delineated active linear drainage features with labeling indicating their average OHWM width overlaid onto orthorectified digital imagery. Based on guidance received from Corps staff, only representative ephemeral drainages were mapped within a watershed that drains to an isolated dry lake that has no surface water drainage outlet. Resulting mapping depicts representative ephemeral drainages within the Study Area and the surface water flow path from the Study Area to the isolated dry lake.

4.0 TECHNICAL FINDINGS

The following sections describe the landscape features and field indicators found within the Study Area that provide a technical basis for (a) determining the presence or absence of a potential water of the United States; and (b) defining the geographic extent of any potential water of the United States identified. Two types of landscape features were found that potentially contain waters of the United States. These include:

1. Natural drainages
2. Manmade drainages

4.1 Field Indicators of Hydric Soils

Based on field observations within the Study Area soil indicators were not found that meet the hydric soils criteria defined by current Corps' regulatory guidance, including the *2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0). On site observations of surface conditions, including road and channel bank cuts and interpretation of aerial photography revealed two primary soil types, desert pavement and more active wash sediments. On site examination revealed that soils or substrates within both natural drainages and manmade drainages consist of alluvial materials primarily made up of sorted sands and gravel, and are well drained, ranging from moderately well drained to excessively well drained.

4.2 Field Indicators of Wetland Hydrology Conditions

Based on field observations within the Study Area wetland hydrology indicators were not found that meet the wetland hydrology criteria defined by current Corps' regulatory guidance, including the *2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0). On site observations revealed evidence of flooding within the low-lying natural and manmade drainages. These observations also showed that there was no evidence of ponding and soil saturation for long to very long periods of time. The lack of ponding and soil saturation conditions meeting the wetland hydrology criteria is a direct result of the moderately well drained to excessively well drained alluvial soils.

Although wetland hydrology conditions were not found within the Study Area, the field indicators of active surface water flow or flooding found within natural and manmade drainages were sufficient enough to form Ordinary High Water Marks (OHWM). As indicated in Section 2.0, an OHWM provides a technical basis for (a) determining the presence a potential water of the United States; and (b) defining the geographic extent of potential water of the United States.

The natural and manmade drainages within the Study Area found with an OHWM exhibited the following characteristics which are discussed in detail in the following subsections:

1. Identifiable field indicators of surface flow
2. Identifiable landscape features that supports surface flow
3. Identifiable landscape features with a recognizable OHWM

Exhibit A, Figures 5-12 provides typical examples of field indicators of active surface water flow and OHWMs found within ephemeral drainages occurring within the DesertXpress Project Study Area. Exhibit A, Figures 13-19 provide photographs of various types of drainages observed within the HUC 8 Death Valley - Lower Amargosa watershed.

4.2.1 Field Indicators of Surface Flow

Review of topographic mapping (USGS and Engineer scale) and imagery of the Study Area provided visual indication of the presence of curvilinear depressional land surface features where focused surface water flow could potentially be directed. Linear drainage features associated with road drainage and flood control were also found. Field investigations confirmed the presence of surface flow within a number of these channels or drainages while others lacked evidence / field indicators of active ephemeral surface water flow. No drainages were found to contain evidence of perennial or intermittent surface water flow, and no evidence of subsurface flow was found in the form of spring discharges, artesian flows or indicia of a high groundwater table. Observation of active natural and manmade ephemeral drainages revealed evidence of surface water / hydrologic connectivity with other active drainages within and outside the Study Area. These ephemeral drainages are locally referred to as "desert dry washes." The manmade drainages served to redirect surface flow from altered natural drainages. Indicators of drainages having active surface water flow paths included (1) water marks defined by linear deposits of fine grained sediment, minerals and/or plant debris; (2) bank scour, erosion and/or shelving; (3) deposits of sorted alluvial materials; and (4) flow deposited woody and soft tissue plant debris (Exhibit B2).

Flow-deposited woody and soft tissue plant debris were typically absent in drainages that did not have active surface flow. If woody debris was present, the pieces observed were relatively thick (i.e., greater that ¼ inch) weathered limb or root material or milled posts or lumber. The wood pieces found were randomly placed and were not part of a collective flow line of deposited woody and/or soft tissue plant debris, which would be indicative of an active channel. The historical drainages were found to possess one or more of the same type of indicators found in active drainages, but the indicators found were considerably weathered. Surface flow indicators such as bank scour, erosion and shelving areas had rounded edges in contrast to those found in active drainages having angular edges. Water marks defined by linear deposits of fine grained sediment and minerals, and sorted alluvial materials such as gravels, cobbles and boulders were etched or varnished from weathering. The historical drainages were found to consist of the historical remains of channel drainages that were abandoned due to upslope changes in drainage due to either channel down-cutting or the channel becoming abandoned as the surface drainage became redirected or changed course due to deposition of alluvial material damming the channel flow path. The historical drainages were found to lack

indicators of active flow.

Surface water flow patterns were also found within various portions of the landscape that were relatively flat. These surface flow areas were defined by flow-deposited fine grained sediment or soft tissue plant debris. The visible surface flow pattern at these locations would continue for several feet then disappear either on a relatively flat soil surface or localized depression.

Based on the above technical findings and as documented in Exhibits B and C, drainages were found with indicators of active surface water flows within the Study Area.

4.2.2 Landscape Features that Support Surface Flow

Detailed field surveys identified land surface features that have the potential to convey surface flows. These features included a bed or channel and abutting banks. These physical features were found associated with both active flow areas and historical drainages. These drainage types can be summarized as follows:

1. Active drainage channel and abutting banks containing evidence of recent surface flows as indicated by the presence of unweathered sediment material (sand, gravel, cobbles, etc.) with unweathered surfaces, and the presence of flow deposited woody debris and/or soft tissue plant debris.
2. Active drainage channel and abutting banks containing evidence of historical surface flows as indicated by the presence of unweathered sediment material (sand, gravel, cobbles, etc.) with unweathered surfaces, but lacked the presence of flow deposited woody debris and/or soft tissue plant debris.
3. Historical drainage channels and abutting banks having no evidence of recent surface flow as indicated by weathered sedimentary gravel, cobbles, boulders, erosional or depositional deposits, and the lack of flow deposited woody debris and/ or soft tissue plant debris.

The frequency interval of flow events within drainages with observable plant debris (1 above) and unweathered sediment material is estimated to be within the 1 to 15 year range. Strojan, et al. (1987) found that surface litter decomposition rates for creosote bush and burro bush in the Mojave Desert were 42.5% and 58.4%, respectively over a 54 week period of study. Kemp, et al. (2003) reported a similar one year decomposition rate for creosote bush and a 74% loss within a 41 month period. This lends support to qualitative observations made by one of the preparers of this report, Dr. Terry Huffman, who has observed over 20 + years of delineating wetlands within arid environments that soft plant tissue (i.e., pieces of plant leaves and thin bark) will decompose in arid drainage environments within a 2 to 3 year period. In addition, field observations over these years indicated that small woody stems (<1/4 inch) decompose over many more years, perhaps 10 + years. For older drainages where the surfaces of the sediment material (e.g., sand, gravel, cobbles, etc.) is no longer smoothed by the interaction of surface water flow and transport, but weathered, and lacks flow deposited woody and thin tissue plant debris, the frequency interval likely ranges to well over a decade in shallower

channels to prehistoric times for deeply incised channels (i.e., > 6 feet in desert pavement areas).

The land surface of the Study Area is characterized by the presence of active and inactive alluvial fan systems. Ephemeral drainage channels are found on both types of these alluvial fan types. The majority of the ephemeral channels supporting active surface water flow were narrow, with an average width of less than 3 feet. Active alluvial fans were characterized by sandy soils, a uniform vegetation type, and evidence by surface flow patterns indicative of surface water sheetflow. Narrow channels within these areas were both weakly expressed and discontinuous. This discontinuity indicated that new channels could be formed with each major flood event resulting in the current channels being bypassed and blocked off. Channels >3 feet wide were also found. These channels were considerably deeper that the narrow channels found and were less common when considering the landscape as a whole in relationship to the Study Area. Evidence was found within both of these channel types where previously bypassed cutoff channels where becoming filled with sediment. The specific conditions varied within the Study Area.

Based on the above technical findings, drainages with active surface flow were found within the Study Area with physical features that allow for the conveyance of surface flows.

4.2.3 Landscape Features with a Recognizable OHWM

The desert dry washes with active flow were found to have identifiable features which represented the geographic reach of lateral surface water. These features included channels or beds with evidence of active flow and abutting banks which demarcated the lateral reach or extent of flow. Field indicators of the extent of active flow along the banks included water marks defined by linear deposits of fine grained sediment and/or minerals, bank scour, erosion, and/or shelving, and flow-deposited woody and soft tissue plant debris (Exhibit B).

Based on the above technical findings, the active drainages, described in the above subsections, have recognizable landscape features from which the lateral extent of surface water flow can be geographically delineated. Field indicators of this surface water flow were used to identify the OHWM. Exhibit C shows representative active ephemeral drainages, as described in Section 3.5, Mapping.

4.3 Field Indicators of Wetland Vegetation

Based on field observations within the Study Area a dominance of wetland plant species or hydrophytes was <u>not</u> found. Based on this result the criteria defined by current Corps' regulatory guidance, including the *2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) for wetland vegetation was <u>not</u> met.

4.4. Presence of Wetland Vegetation within Natural and Manmade Drainages

Based on field observations within the Study Area, a dominance of wetland plant species or hydrophytes was not found within natural or manmade drainages within the Study Area where active ephemeral drainages were found.

5.0 AREAS POTENTIALLY SUBJECT TO JURISDICTION

This section presents the findings of this delineation with respect to the identification and geographic extent of areas found that could potentially be regulated by the Corps and the EPA as wetlands or other waters of the United States under Section 404 of the Clean Water Act.

5.1 Wetlands

No areas meeting the Corps technical criteria for wetlands were identified within the Study Area. These findings are based on the absence of hydric soil, wetland hydrology, and / or wetland vegetation indicators as required by the Corps' *1987 Manual, the Arid West Regional Supplement*, guidance documents, and regulations.

5.2 Other Waters of the U.S.

Ephemeral drainages or desert dry washes were found within the Study Area that meet the technical criteria to potentially be subject to CWA Section 404 jurisdiction as Other Waters of the United States (Exhibit C). This finding is based on the presence of an OHWM as required by Corps regulations. Length and width measurements of the ephemeral drainages found to contain an observable OHWM are provided by Exhibit B.

6.0 CWA JURISDICTIONAL ANALYSIS

This section analyzes the potential for waters identified within the Study Area to constitute waters of the United States subject to jurisdiction under the CWA. Section 6.1 provides an explanation of the jurisdictional determination process following EPA and Corps guidance. Section 6.2 defines the area to be analyzed (i.e., the Review Area). Section 6.3 analyzes the potential for waters of the United States to be present in the Review Area. Section 6.4 describes any jurisdictional and /or non-jurisdictional waters found. Section 6.5 summarizes the findings of this jurisdictional analysis. Section 6.6 is a disclaimer statement.

6.1 Regulatory Background

Beyond the Corps and EPA regulatory definitions of "waters of the United States" as described in Section 2.0, recent judicial decisions have further limited and refined the scope of CWA jurisdiction with regard to isolated waters and certain wetlands and non-navigable tributaries. Two of these decisions are relevant to this jurisdictional analysis.

First, in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, No. 99-1178* (531 U. S. 159; [2001]) (*SWANCC*), both statutory and constitutional challenges were made to the assertion of CWA jurisdiction over isolated, non-navigable, intrastate waters solely on the basis that those waters were used as habitat by migratory birds. The U.S. Supreme Court in *SWANCC* rejected the "migratory bird rule," and held that CWA jurisdiction does not exist over "isolated, non-navigable, intrastate waters" where there is no nexus to interstate or foreign commerce.

Second, the U.S. Supreme Court's plurality opinion in *Rapanos v. United States,* 547 U.S. 715 (2006) (*Rapanos*), addressed jurisdiction over waters of the United States under Section 404 of the CWA. The concurring opinion by Justice Kennedy held in pertinent part that waters with a "significant nexus" to "navigable waters" are covered under the CWA. In response to *Rapanos*, on December 2, 2008, USEPA and the Corps issued guidance to EPA regions and Corps districts (the "Rapanos Guidance") to address the jurisdictional scope of the CWA over certain types of waters (i.e., traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries that are relatively permanent, and wetlands that directly abut tributaries). The Rapanos Guidance identifies which waters the agencies will categorically assert jurisdiction over and which will be subject to a case-by-case analysis based on the reasoning of the *Rapanos* opinions to identify whether the water has a "significant nexus" to a "traditional navigable water" (TNW). The Rapanos Guidance focuses only on those definitions of "waters of the United States" in 33 C.F.R. § 328.3(a)(1), (a)(5) and (a)(7).[2] Neither the Supreme Court nor the Rapanos Guidance draws a bright line with regard to the

2 The Rapanos Guidance covers the following 33 C.F.R. § 328.3(a) definition of "waters of the United States":
(a)(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(a)(5) Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
(a)(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.

geographic reach of jurisdiction, particularly in drainages where flows are ephemeral and where wetlands are adjacent to, but not directly abutting relatively permanent waters. The Rapanos Guidance provides in pertinent part the following:

- The agencies will assert jurisdiction over non-navigable, not relatively permanent tributaries and their adjacent wetlands where such tributaries and wetlands have a ***significant nexus*** to a traditional navigable water.

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters.

- "Similarly situated" wetlands include all wetlands adjacent to the same tributary.

- Significant nexus includes consideration of hydrologic factors including the following: volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary; proximity to the traditional navigable water; size of the watershed; average annual rainfall; average annual winter snow pack.

- Significant nexus also includes consideration of ecologic factors including the following : potential of tributaries to carry pollutants and flood waters to traditional navigable waters; provision of aquatic habitat that supports a traditional navigable water; potential of wetlands to trap and filter pollutants or store flood waters; maintenance of water quality in traditional navigable waters.

- The following geographic features generally are not jurisdictional waters: swales or ***erosional features*** (e.g. gullies, small washes characterized by low volume, infrequent, or short duration flow)…. [Rapanos Guidance, at p. 8 (emphasis added)]

According to the Rapanos Guidance, a significant nexus analysis ". . . will assess the flow characteristics and functions of the tributary itself, together with the functions performed by any wetlands adjacent to that tributary," to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. (Rapanos Guidance, p. 8) The analysis will consider both hydrologic and ecologic factors. Hydrologic factors include volume, duration, and frequency of flow, proximity to the TNW, size of the watershed, and average annual rainfall. Ecologic factors include the potential for tributaries to carry pollutants and flood waters to TNWs or to provide aquatic habitat to support a TNW, and the potential for wetlands to trap and filter pollutants or store flood waters. The Guidance states (on p.10), "[w]here it is determined

that a tributary and its adjacent wetlands collectively have a significant nexus with traditional navigable waters, the tributary and all of its adjacent wetlands are jurisdictional."

6.2 Review Area

For the purpose of this analysis, the Study Area used for the delineation process is also to be considered the Review Area. A Review Area as defined by the Rapanos Guidance is the area of interest for the verification of the location and extent of waters of the United States. Exhibit D presents a series of maps that show the Review Area relative to Badwater Basin. Exhibits D1 and D2 show USGS National Hydrography Dataset (NHD) flowlines and arrows that indicate the direction and route of surface water flow from the Review Area toward Badwater Basin; the NHD data are superposed respectively on an aerial photo and on a USGS topographic map. Exhibits D3 and D4 show the extent of the Review Area (also referred to as the Study Area).

6.3 CWA Analysis

Section 5.0 of this report discusses a number of active ephemeral drainages (locally known as desert dry washes) identified and delineated within the Study Area / Review Area that meet the technical criteria of "other waters" *potentially* subject to CWA jurisdiction. Maps showing the geographic extent of these drainages within the Review Area are presented in Exhibit D (Exhibits D1 – D4). The following discussion follows the Corps Approved Jurisdictional Determination Form developed following the *Rapanos* decision.

6.3.1 Are Jurisdictional Waters Present within the Study Area (Rapanos Guidance)?

Table 6 provides a summary of the Rapanos Guidance process for determining jurisdiction over waters of the United States under Section 404 of the CWA.

Table 6. Summary of Process for Determining Jurisdiction Over Waters of the U.S. Under Section 404 of the Clean Water Act Following EPA and Corps Rapanos Guidance*

"Approved JD Form" Categories of Potential Waters of the U.S.**	**Will Corps Categorically Assert Jurisdiction?**	**Corps Will Assert Jurisdiction Based on a Fact-Specific Analysis to Determine Whether Waters Identified Have a Significant Nexus With a TNW**	
		Analysis Based on Significant Nexus Testing	*Comments*
1. Traditional navigable waters (TNWs), including territorial seas, and adjacent wetlands	Yes	Not Applicable (NA)	NA
2. Wetlands adjacent to TNWs	Yes	NA	NA
3. Relatively permanent waters (RPWs)[3] that flow directly or indirectly into TNWs	Yes	NA	NA

[3] Under the Corps / EPA Rapanos Guidance, a Relatively Permanent Water (RPW) is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

Table 6. Summary of Process for Determining Jurisdiction Over Waters of the U.S. Under Section 404 of the Clean Water Act Following EPA and Corps Rapanos Guidance*			
"Approved JD Form" Categories of Potential Waters of the U.S.**	**Will Corps Categorically Assert Jurisdiction?**	**Corps Will Assert Jurisdiction Based on a Fact-Specific Analysis to Determine Whether Waters Identified Have a Significant Nexus With a TNW**	
		Analysis Based on Significant Nexus Testing	*Comments*
4. Non-RPWs that flow directly or indirectly into TNWs	No	Yes	Jurisdictional if the drainage flows directly or indirectly into a TNW and has a significant nexus with the TNW
5. Wetlands directly abutting RPWs that flow directly or indirectly into TNWs	Yes	NA	NA
6. Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs	No	Yes	Jurisdictional when considered in combination with the tributary to which they are adjacent and, with similarly situated adjacent wetlands, have a significant nexus with a TNW
7. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs	No	Yes	Jurisdictional when considered in combination with the tributary to which they are adjacent and, with similarly situated adjacent wetlands, have a significant nexus with a TNW
8. Impoundments of jurisdictional waters	Generally, impoundment of a water of the U.S. does not affect its jurisdictional status.	NA	Yes, if: ▪ Impoundment created from WOUS ▪ Water meets one of the above waters categories ▪ Water is isolated with a significant nexus to interstate or foreign commerce (to be elevated to Corps Headquarters for review consistent with Rapanos Guidance)
9. Isolated (interstate or intrastate) waters including isolated wetlands the use, degradation or destruction of which could affect interstate commerce	No		To be elevated to Corps Headquarters for review consistent with Rapanos Guidance

* U.S. Army Corps of Engineers. 2007. *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook.* May 30.
** U.S. Army Corps of Engineers. 2007. Appendix B, Approved JD Form, Section II, in *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook.* May 30.

As described in the technical findings of this report (Section 4.0), the active ephemeral drainages identified in the Review Area are not permanent or even seasonal, but rather flow or flood for few hours during heavy precipitation events. The climate data in Section 1.0 indicates that the Review Area receives an annual average rainfall amount of 4 inches. Thus, these ephemeral drainages are non-Relatively Permanent Waters (non-RPWs). (A Relatively Permanent Water is defined in the Rapanos Guidance as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months). Representative drainages that flow to Badwater Basin are shown on Exhibits D3 and D4. These drainages (non-RPWs) are also listed in the Exhibit B field data table. In addition, no areas were found within the

Review Area that meet the Corps criteria for wetlands in the 1987 Corps of Engineers *Wetlands Delineation Manual* and/or the 2008 Arid West Supplement.

Using the Rapanos Guidance analysis as summarized by Table 6, the non-RPWs were determined *not* to fall within any of the categories of potential waters of the U.S., as shown below in Table 7.

Table 7. Summary of EPA and Corps Rapanos Analysis

"Approved JD Form" Categories of Potential Waters of the U.S.*	Wetlands Present? (acres)	Other Waters of the U.S Present? (acres)	Rationale For Determination if Waters in Review Area are Subject to Corps Jurisdiction under CWA Section 404
1. Traditional navigable waters (TNWs), including territorial seas	No	No	Criteria for type of water not met; waters are non-RPWs.
2. Wetlands adjacent to TNWs	No	No	Criteria for type of water not met; no wetlands present within Review Area.
3. Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs	No	No	Criteria for type of water not met; waters are non-RPWs, but do not flow directly or indirectly into TNWs.
4. Non-RPWs that flow directly or indirectly into TNWs	No	No	Criteria for type of water not met; waters are non-RPWs that do not flow directly or indirectly into a TNW.
5. Wetlands directly abutting RPWs that flow directly or indirectly into TNWs	No	No	Criteria for type of water not met; no wetlands present within Review Area.
6. Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs	No	No	Criteria for type of water not met; no wetlands present within Review Area.
7. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs	No	No	Criteria for type of water not met; no wetlands present within Review Area.
8. Impoundments of jurisdictional waters	No	No	Criteria for type of water not met; waters are non-RPWs.
9. Isolated (interstate or intrastate) waters including isolated wetlands the use, degradation or destruction of which could affect interstate commerce	No	No	Criteria for type of water not met. See Table 8 for interstate commerce analysis for the Review Area, the drainages connecting the Review Area to Badwater Basin, and Badwater Basin.

* U.S. *Army Corps of Engineers. 2007.* Appendix B, Approved JD Form, Section II, in *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. May 30.*

6.3.2 Are There Isolated Waters within the Study Area?

When the non-RPWs identified within the Review Area flow, they flow toward the western boundary of Badwater Basin, an ephemeral dry lake with no outlet (Exhibit D). No substantial nexus to interstate or foreign commerce was found associated with the non-RPWs within the Review Area based on the following fact-specific analysis provided in Table 8 regarding whether the use, degradation, or destruction of the intrastate non-RPWs within the Review Area would affect interstate commerce. On the basis of HBG's analysis, Badwater Basin was found to be: (1) a non-TNW, (2) an intrastate water located entirely within the state of California, and (3) an isolated basin with no hydrologic surface water outlet. No surface water connection to interstate or foreign commerce was found.

Table 8. Interstate/Foreign Commerce Analysis				
Factors Used to Determine Substantial Nexus to Interstate or Foreign Commerce	**Could the Use, Degradation or Destruction of the Intrastate non-RPWs within the Review Area, Drainages Connecting the Review Area to Badwater Basin, or Badwater Basin Affect Interstate or Foreign Commerce?**	**Fact-Specific Analysis**		
		Review Area	**Drainages Connecting the Review Area to Badwater Basin**	**Badwater Basin**
Waters which are or could be used by interstate or foreign travelers for recreational purposes.	No	Given the ephemeral as well as unpredictable nature of surface flows, no recreational use occurs that is surface water dependent. This was confirmed by site inspection, review of remote sensing imagery, and internet search.	Given the ephemeral as well as unpredictable nature of surface flows, no recreational use occurs that is surface water dependent. This was confirmed by site inspection, review of remote sensing imagery, and internet search.	Given the ephemeral as well as unpredictable nature of surface ponding, no recreational uses occur that are surface water dependent. This was confirmed by site inspection, review of remote sensing imagery, and internet search.
Waters from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.	No	Given the ephemeral as well as unpredictable nature of surface flows, no fish or shellfish habitat is associated with the ephemeral drainages. This was confirmed by site inspection, review of remote sensing imagery, and internet search.	Given the ephemeral as well as unpredictable nature of surface flows, no fish or shellfish habitat is associated with the ephemeral drainages. This was confirmed by site inspection, review of remote sensing imagery and internet search.	Given the ephemeral as well as unpredictable nature of surface ponding, no fish or shellfish habitat is associated with this playa lake. This was confirmed by site inspection, review of remote sensing imagery, and internet search.
Waters which are or could be used for industrial purposes by industries in interstate commerce.	No	Given the ephemeral as well as unpredictable nature of surface flows, the non-RPWs are not used and could not be used for surface-water-dependent industrial purposes, including, but not limited, to mineral extraction, power generation, and agricultural irrigation. This was confirmed by site inspection, review of remote sensing imagery, and internet search.	Given the ephemeral as well as unpredictable nature of surface flows, the non-RPWs are not used and could not be used for surface-water-dependent industrial purposes, including, but not limited, to mineral extraction, power generation, and agricultural irrigation. This was confirmed by site inspection, review of remote sensing imagery, and internet search.	Given the ephemeral as well as unpredictable nature of surface ponding, the waters are not used and could not be used for surface-water-dependent industrial purposes, including but not limited to mineral extraction, power generation, and agricultural irrigation. This was confirmed by site inspection, review of remote sensing imagery, and internet search.
Waters which are <u>inter</u>state isolated waters.	Not Applicable	Waters are <u>intra</u>state non-RPWs found within the State of California with no nexus to interstate or foreign commerce, as demonstrated by the above analysis.	Waters are <u>intra</u>state non-RPWs found within the State of California with no nexus to interstate or foreign commerce, as demonstrated by the above analysis.	Badwater Basin is an <u>intra</u>state water found within the State of California with no nexus to interstate or foreign commerce, as demonstrated by the above analysis. This isolated basin has no outlet (Exhibits D1 and D2).
Other factors	Not Applicable	No other factors known to occur.	No other factors known to occur.	No other factors known to occur.

6.4 Are Non-Jurisdictional Waters Present within the Study Area?

On the basis of the above analysis and findings, no areas were found within the Review Area, drainages connecting the Review Area to Badwater Basin, or Badwater Basin that meet the Corps criteria for wetlands defined in the 1987 Corps of Engineers *Wetlands Delineation Manual* and/or the 2008 Arid West Supplement. The above analysis also found that the Review Area and drainages connecting the Review Area to Badwater Basin contain non-RPWs that are isolated, non-navigable, and wholly intrastate waters with no substantial nexus to interstate or foreign commence. Furthermore, Badwater Basin itself is an isolated, non-navigable and wholly intrastate water with no substantial nexus to interstate or foreign commence. As required, as part of the determination process under the Rapanos Guidance, it should be noted that:

1. Prior to the January 2001 Supreme Court decision in SWANCC, some portion of the non-RPWs in the Review Area would likely have been subject to CWA jurisdiction based on the then-existing Migratory Bird Rule (51 F.R. 41217), given the likely presence of migratory waterbirds during ephemeral ponding and the presence of a federal listed endangered species, the desert tortoise (*Gopherus agassizii*)[4], within the Review Area.
2. The waters are isolated with no significant nexus to interstate or foreign commerce and therefore no significant nexus standard analysis for connectivity to a TNW is required by the Rapanos Guidance as non-RPWs are not in a category of water requiring such analysis.

6.5 Jurisdictional Analysis Summary

On the basis of the above analysis and as seen in the maps in Exhibit D and summarized in Table 9, the active ephemeral drainages (non-RPWs or desert dry washes) found within the (1) Review Area, (2) drainages connecting the Review Area to Badwater Basin, and (3) Badwater Basin would be considered non-jurisdictional under the CWA. The non-RPWs within the Review Area are *not* jurisdictional waters of the United States based on the facts that:

1. No wetlands were found with the Review Area as there were no areas that met the criteria in the 1987 Corps of Engineers *Wetlands Delineation Manual* and/or the 2008 Arid West Supplement.
2. The non-jurisdictional non-RPWs found are isolated waters with no substantial connection to interstate or foreign commerce.

[4] Under the Migratory Bird Rule (51 F.R. 41217) the presence of or the potential for use by migratory birds and/ or Federally-listed species satisfies the determination requirements.

Table 9. Jurisdictional Analysis Summary				
"Approved JD Form" Categories of Potential Waters of the U.S.*	**Was Category of Waters Identified in Study Area?**	**Nexus to Interstate or Foreign Commerce?**	**Jurisdictional Water Found?**	**Non-Jurisdictional Water Found?**
1. Traditional navigable water (TNW), including territorial seas	No	No	No	No
2. Wetlands adjacent to TNWs	No	No	No	No
3. Relatively permanent waters (RPWs) that flow directly or indirectly into TNWs	No	No	No	No
4. Non-RPWs that flow directly or indirectly into TNWs	No	No	No	No
5. Wetlands directly abutting RPWs that flow directly or indirectly into TNWs	No	No	No	No
6. Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs	No	No	No	No
7. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs	No	No	No	No
8. Impoundments of jurisdictional waters	No	No	No	No
9. Isolated (interstate or intrastate) waters including isolated wetlands the use, degradation or destruction of which could affect interstate commerce	No	No	No	No
Waters** that are **not** one of the above nine categories of potential Waters of the U.S.	**Yes**	No	No	**Yes** Review Area: ***Non-RPWs*** Drainages Connecting the Review Area to Badwater Basin: ***Non-RPWs*** Badwater Basin: ***Isolated Water***
* U.S. Army Corps of Engineers. 2007. Appendix B, Approved JD Form, Section II, in *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook.* May 30.				
** Areas that meet the technical criteria for wetlands (collective presence of hydric soil, wetland hydrology and wetland vegetation indicators) or have an Ordinary High Water Mark (OHWM) but have no significant nexus to a TNW or connection to interstate commerce. 33 CFR 328.3(a)(3) states: "All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters (i) which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce' or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce"				

6.6 Disclaimer

HBG has made a good-faith effort herein to thoroughly describe and document the presence of potential factors that the Corps may consider. Nevertheless, DXE reserves the right to challenge or seek revision to any areas over which the Corps may assert such jurisdiction, as the implementation of the Corps / EPA Rapanos Guidance is further clarified or altered through formal guidance, assertions or disclaimers of jurisdiction over other properties, court decisions, or other relevant actions.

7.0 References

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Exhibit A

Figures

Figure 1	DesertXpress Project Alignment Alternatives
Figure 2	Location of Alignment Alternatives Within HUC-8 Watershed
Figure 3	Location of Study Area
Figure 4	Location of Study Area Within HUC-8 / HUC-12 Watersheds
Figures 5-12	Typical Examples of Field Indicators of Active Surface Water Flow and Ordinary High Water Marks Found Within Ephemeral Drainages Occurring Within the DesertXpress Project Study Area.
Figures 13-19	Examples of Drainages Found Within HUC-8 Watershed

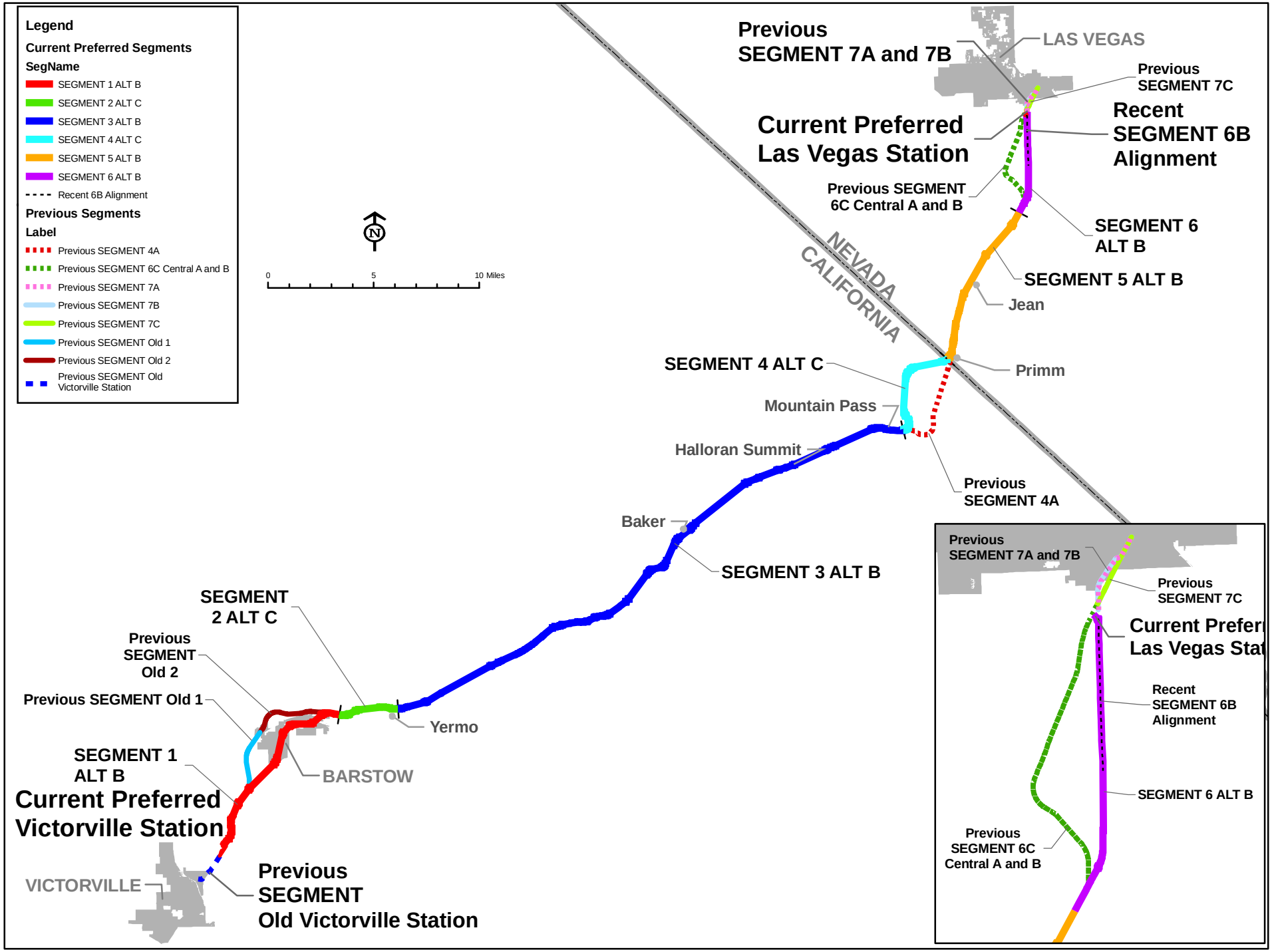

Figure 1. DesertXpress Project Alignment Alternatives F-I.1-46

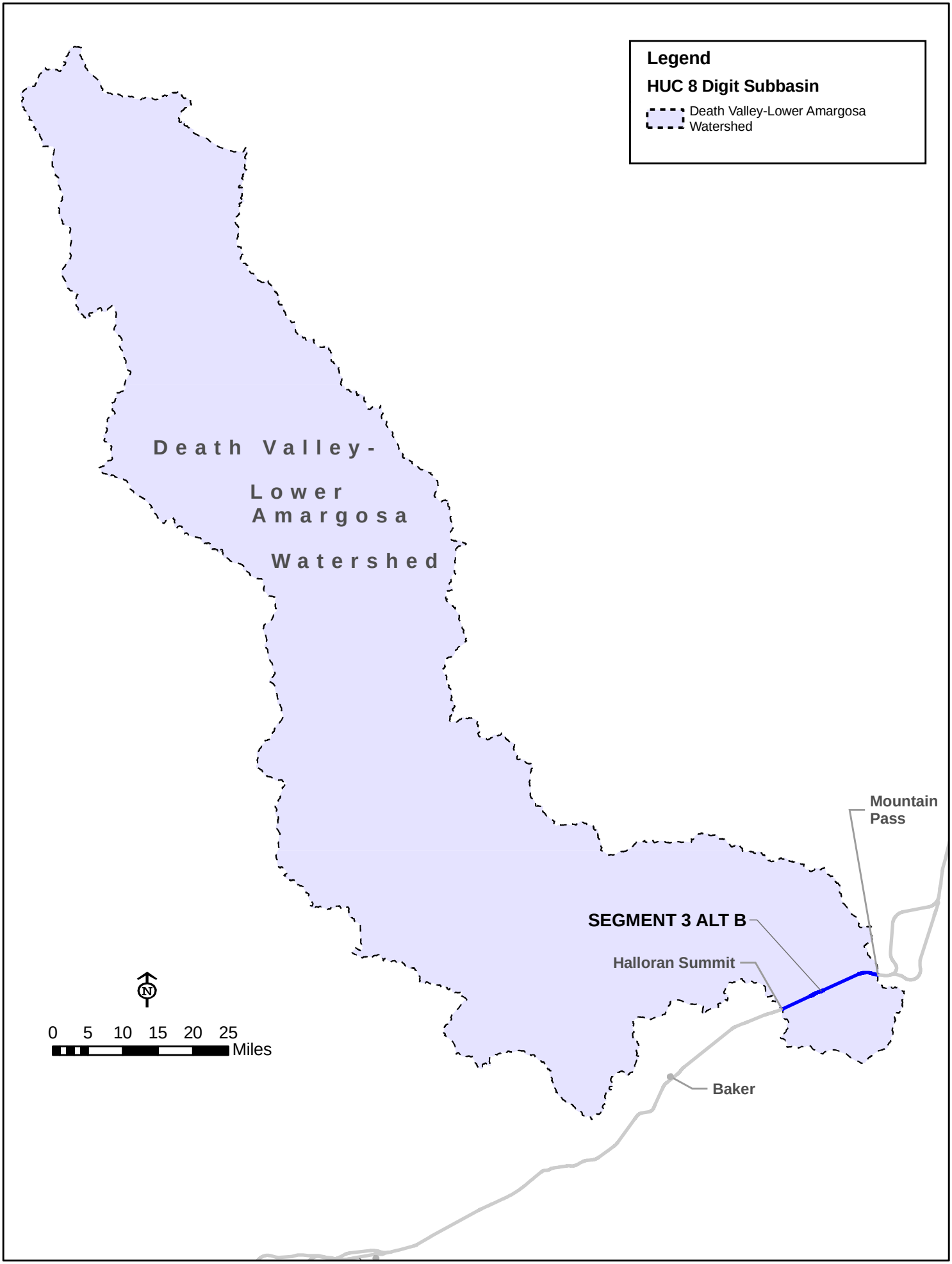

Figure 2. Location Of Alignment Alternatives Within HUC-8 Watershed

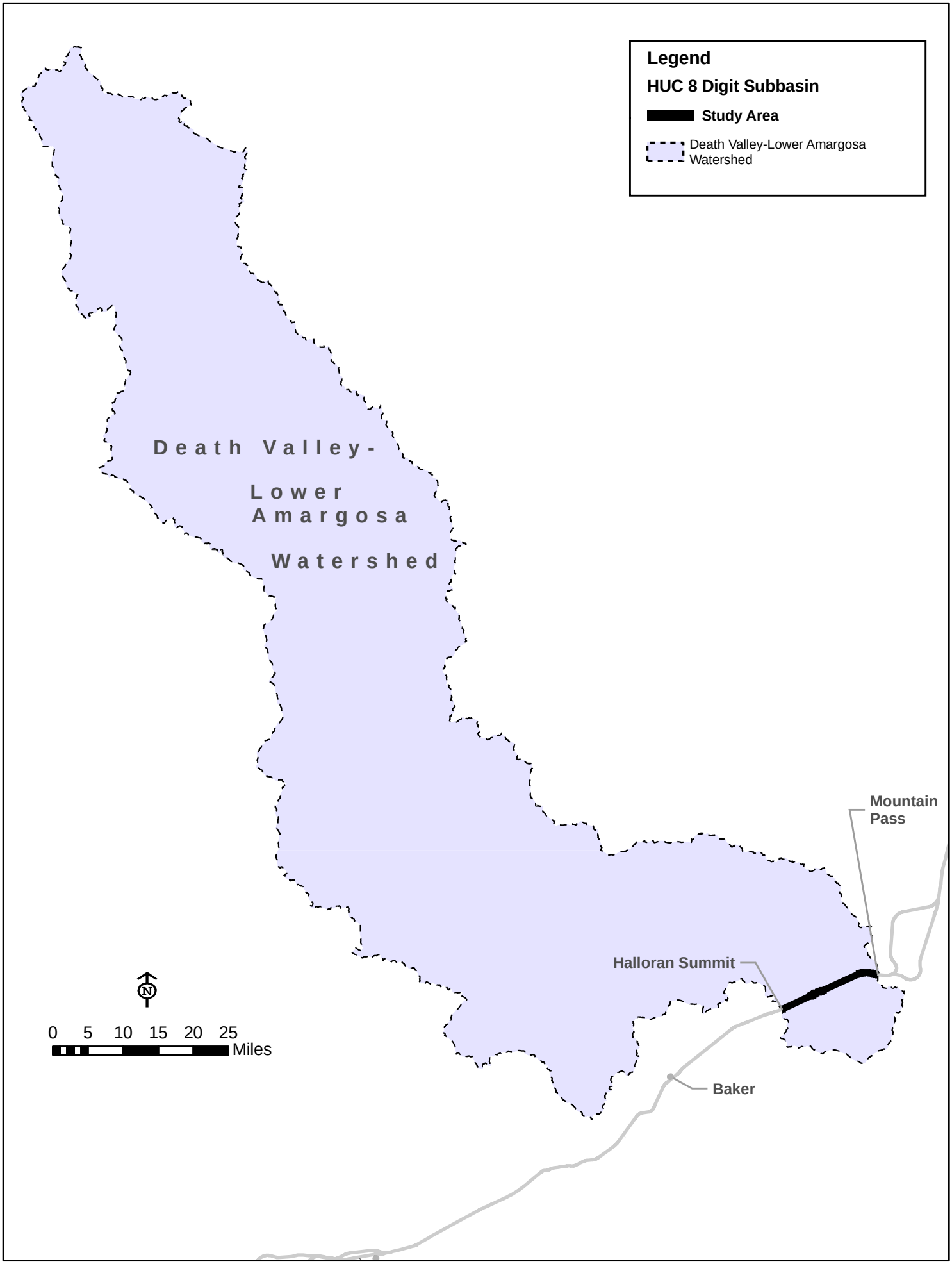

Figure 3. Location of Study Area

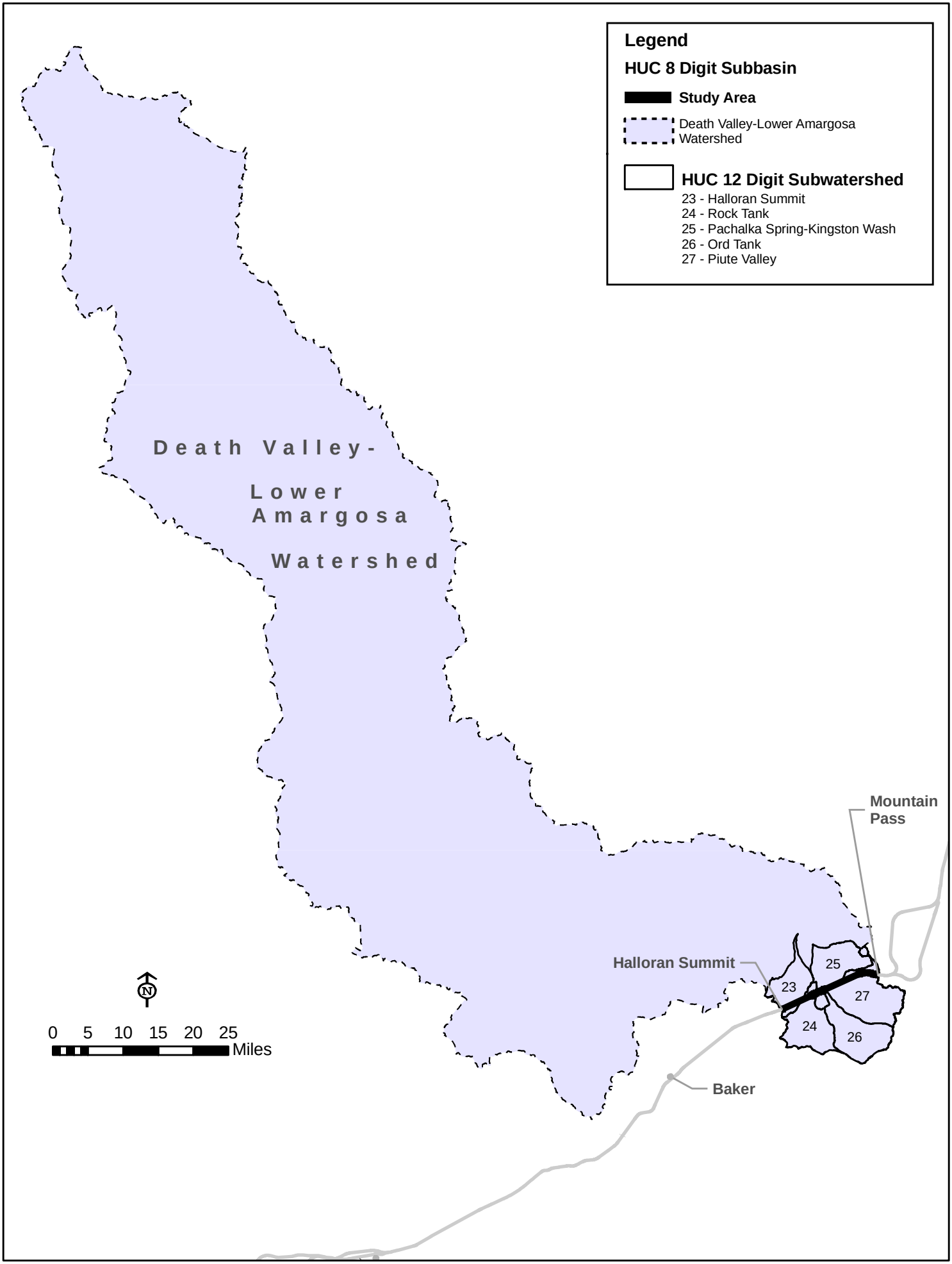

Figure 4. Location of Study Area Within HUC-8 / HUC-12 Watersheds

Exhibit A. Figure 5. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

Exhibit A. Figure 6. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

Exhibit A. Figure 7. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

Exhibit A. Figure 8. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

Exhibit A. Figure 9. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

Exhibit A. Figure 10. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

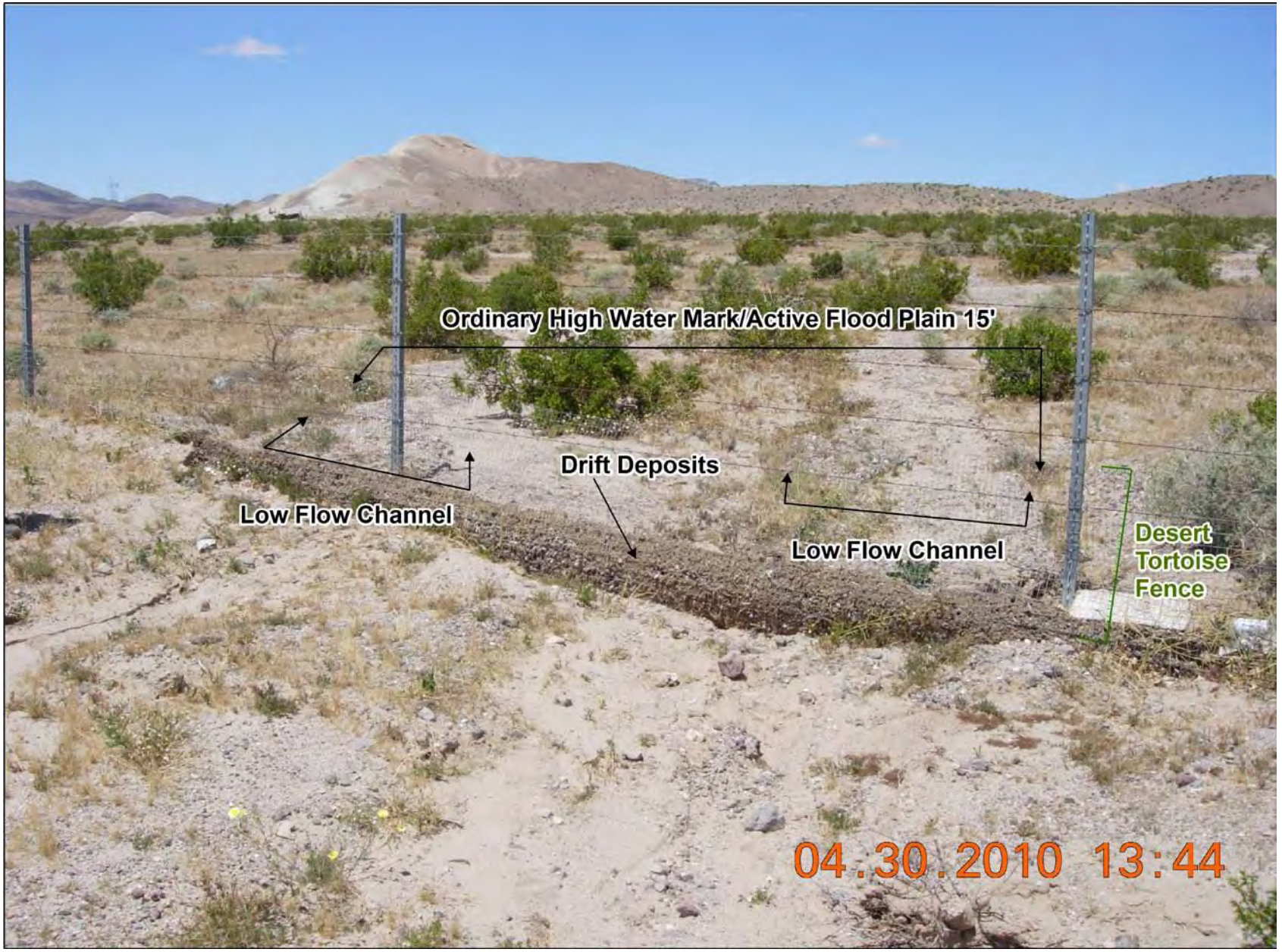

Exhibit A. Figure 11. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

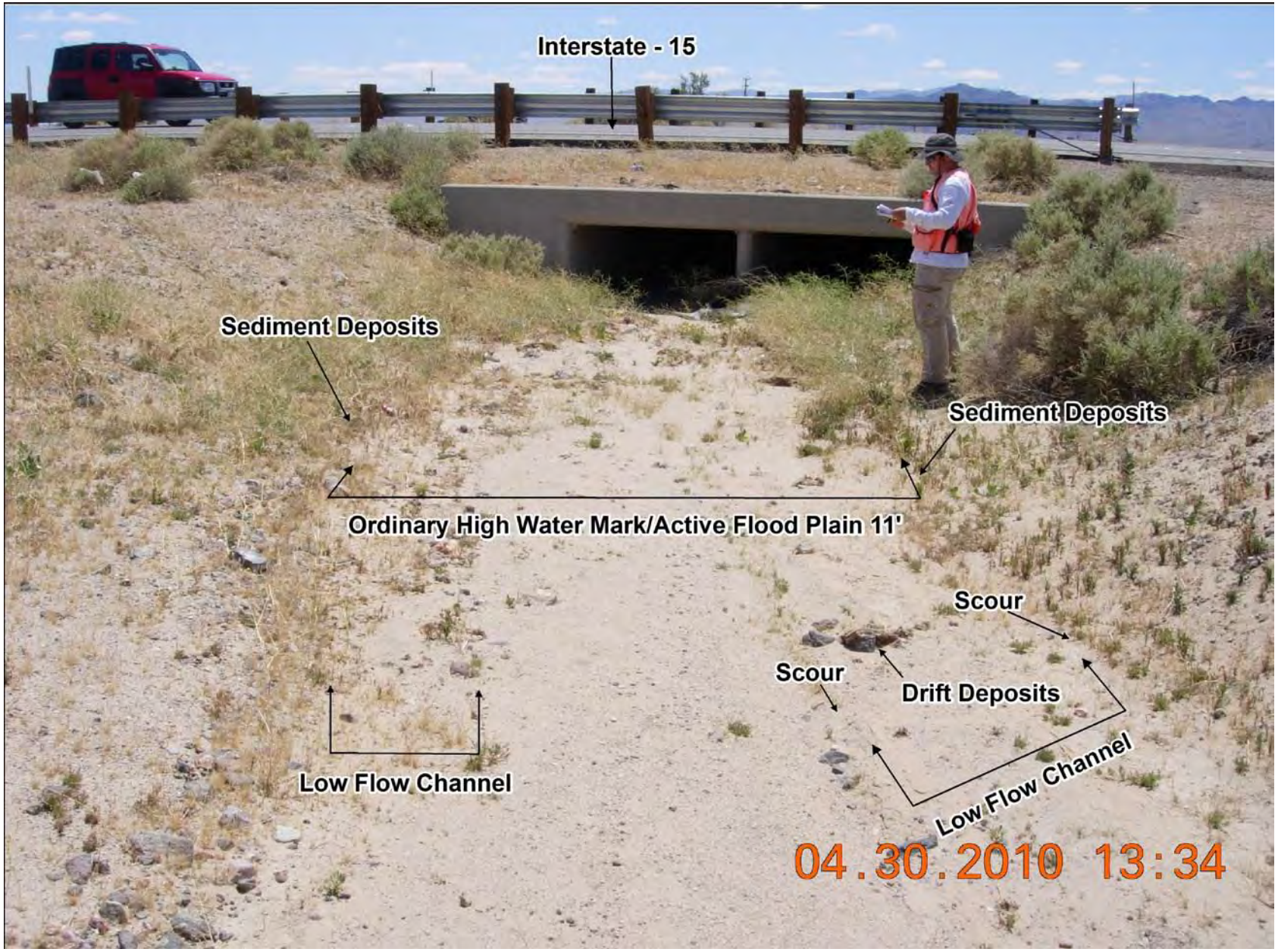

Exhibit A. Figure 12. Typical examples of field indicators of active surface water flow and Ordinary High Water Marks found within ephemerals drainages occurring within the DesertXpress Project Study Area.

Exhibit A. Figure 13. Ephemeral drainage within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit A. Figure 14. Ephemeral drainage within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit A. Figure 15. Ephemeral drainage within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit A. Figure 16. Ephemeral drainage within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit A. Figure 17. Manmade drainage connecting to road culvert within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit A. Figure 18. Manmade drainage connecting to road culvert within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit A. Figure 19. Ephemeral drainage within HUC 8 Death Valley Lower Amargosa / HUC 12 Piute Valley Subwatershed

Exhibit B

Field Data

Exhibit B1 Required Corps Waters Data Summary Table

Exhibit B2 Field Data*

(Exhibit B2 provided on attached CD in PDF format.)

Exhibit B1

Required Corps Waters Data Summary Table

Exhibit B1. Study Area Field Data for Areas Potentially Subject to Corps Jurisdiction, HUC-8 Death Valley-Lower Amargosa, Preferred Route Drainages, DesertXpress Project

Waters_Name	Cowardin_Code	HGM_Code	Area (acres)	Linear (ft)	Waters Types	Latitude (dd nad83)	Longitude (dd nad83)	Local_Waterway	width (OHWM)	HBG Data Field Point
D-23-2	R6	RIVERINE	0.050517	489.0	NRPW	35.406595	-115.782925	Halloran Summit	4.50	
D-23-4	R6	RIVERINE	0.103072	2244.9	NRPW	35.404845	-115.786272	Halloran Summit	2.00	23D3
D-23-7	R6	RIVERINE	0.003747	81.6	NRPW	35.404067	-115.790363	Halloran Summit	2.00	
D-23-9	R6	RIVERINE	0.006892	150.1	NRPW	35.404000	-115.790650	Halloran Summit	2.00	
D-23-10	R6	RIVERINE	0.007989	174.0	NRPW	35.404026	-115.790103	Halloran Summit	2.00	
D-23-11	R6	RIVERINE	0.007534	218.8	NRPW	35.406436	-115.783398	Halloran Summit	1.50	
D-23-12	R6	RIVERINE	0.006017	262.1	NRPW	35.406301	-115.783152	Halloran Summit	1.00	
D-23-13	R6	RIVERINE	0.007163	312.0	NRPW	35.407191	-115.780687	Halloran Summit	1.00	
D-23-14	R6	RIVERINE	0.011033	480.6	NRPW	35.408771	-115.776383	Halloran Summit	1.00	
D-23-17	R6	RIVERINE	0.008136	354.4	NRPW	35.409559	-115.774347	Halloran Summit	1.00	
D-23-18	R6	RIVERINE	0.018223	793.8	NRPW	35.410955	-115.769995	Halloran Summit	1.00	
D-23-20	R6	RIVERINE	0.008710	379.4	NRPW	35.412004	-115.766846	Halloran Summit	1.00	
D-23-23	R6	RIVERINE	0.006476	282.1	NRPW	35.413143	-115.763782	Halloran Summit	1.00	
D-23-24	R6	RIVERINE	0.057932	504.7	NRPW	35.414762	-115.759039	Halloran Summit	5.00	23MD2
D-23-26	R6	RIVERINE	0.065689	476.9	NRPW	35.416842	-115.753578	Halloran Summit	6.00	
D-23-27	R6	RIVERINE	0.004614	201.0	NRPW	35.416969	-115.753350	Halloran Summit	1.00	
D-23-28	R6	RIVERINE	0.008567	373.2	NRPW	35.417086	-115.753094	Halloran Summit	1.00	
D-23-32	R6	RIVERINE	0.026680	387.4	NRPW	35.417808	-115.750624	Halloran Summit	3.00	
D-23-35	R6	RIVERINE	0.029883	433.9	NRPW	35.418951	-115.747540	Halloran Summit	3.00	
D-23-39	R6	RIVERINE	0.023485	341.0	NRPW	35.420459	-115.743362	Halloran Summit	3.00	23D5
D-23-42	R6	RIVERINE	0.011470	333.1	NRPW	35.420630	-115.743592	Halloran Summit	1.50	
D-23-45	R6	RIVERINE	0.067284	418.7	NRPW	35.421347	-115.740829	Halloran Summit	7.00	23MD1
D-23-49	R6	RIVERINE	0.025436	1108.0	NRPW	35.416254	-115.754798	Halloran Summit	1.00	
D-23-50	R6	RIVERINE	0.003021	131.6	NRPW	35.417368	-115.752623	Halloran Summit	1.00	
D-23-51	R6	RIVERINE	0.004022	116.8	NRPW	35.417346	-115.752890	Halloran Summit	1.50	
D-24-2	R6	RIVERINE	0.049954	435.2	NRPW	35.423378	-115.734832	Rock Tank	5.00	
D-24-3	R6	RIVERINE	0.047050	409.9	NRPW	35.424500	-115.731733	Rock Tank	5.00	
D-24-4	R6	RIVERINE	0.037071	403.7	NRPW	35.425835	-115.728196	Rock Tank	4.00	
D-24-6	R6	RIVERINE	0.036896	401.8	NRPW	35.427002	-115.724662	Rock Tank	4.00	24MD2
D-24-7	R6	RIVERINE	0.041304	449.8	NRPW	35.428299	-115.721549	Rock Tank	4.00	
D-24-8	R6	RIVERINE	0.085090	741.3	NRPW	35.429419	-115.717545	Rock Tank	5.00	
D-24-11	R6	RIVERINE	0.048176	333.1	NRPW	35.430128	-115.715903	Rock Tank	6.30	24MD1
D-24-19	R6	RIVERINE	1.085537	788.1	NRPW	35.433342	-115.707693	Rock Tank	60.00	
D-24-27	R6	RIVERINE	0.130450	710.3	NRPW	35.434921	-115.703878	Rock Tank	8.00	
D-24-28	R6	RIVERINE	0.006360	184.7	NRPW	35.434979	-115.704028	Rock Tank	1.50	
D-24-29	R6	RIVERINE	0.011109	322.6	NRPW	35.435008	-115.703669	Rock Tank	1.50	

Exhibit B1. Study Area Field Data for Areas Potentially Subject to Corps Jurisdiction, HUC-8 Death Valley-Lower Amargosa, Preferred Route Drainages, DesertXpress Project

Waters_Name	Cowardin_Code	HGM_Code	Area (acres)	Linear (ft)	Waters Types	Latitude (dd nad83)	Longitude (dd nad83)	Local_Waterway	width (OHWM)	HBG Data Field Point
D-24-30	R6	RIVERINE	0.005362	155.7	NRPW	35.435733	-115.703499	Rock Tank	1.50	
D-25-11	R6	RIVERINE	0.417626	546.3	NRPW	35.437635	-115.695430	Pachalka Spring-Kingston Wash	33.30	25MD2
D-25-21	R6	RIVERINE	0.004800	418.2	NRPW	35.439435	-115.689397	Pachalka Spring-Kingston Wash	0.50	25MD1
D-25-7	R6	RIVERINE	0.008366	520.6	NRPW	35.438486	-115.692918	Pachalka Spring-Kingston Wash	0.70	25D3
D-26-1	R6	RIVERINE	0.099210	270.1	NRPW	35.441309	-115.683918	Ord Tank	16.00	26MD1
D-26-3	R6	RIVERINE	0.003733	162.6	NRPW	35.441378	-115.683246	Ord Tank	1.00	26D3
D-27-1	R6	RIVERINE	0.082090	586.2	NRPW	35.442760	-115.680165	Piute Valley	6.10	27MD9
D-27-21	R6	RIVERINE	0.012116	219.9	NRPW	35.445740	-115.671739	Piute Valley	2.40	
D-27-22	R6	RIVERINE	0.019669	357.0	NRPW	35.445822	-115.671189	Piute Valley	2.40	
D-27-23	R6	RIVERINE	0.005758	104.5	NRPW	35.445940	-115.670943	Piute Valley	2.40	
D-27-38	R6	RIVERINE	0.013041	236.7	NRPW	35.446847	-115.669222	Piute Valley	2.40	
D-27-45	R6	RIVERINE	0.028645	519.9	NRPW	35.447471	-115.666753	Piute Valley	2.40	
D-27-46	R6	RIVERINE	0.014733	267.4	NRPW	35.447546	-115.666880	Piute Valley	2.40	
D-27-47	R6	RIVERINE	0.020149	365.7	NRPW	35.450340	-115.658814	Piute Valley	2.40	
D-27-48	R6	RIVERINE	0.032722	593.9	NRPW	35.453634	-115.649205	Piute Valley	2.40	
D-27-50	R6	RIVERINE	3.417980	13535.2	NRPW	35.452052	-115.652943	Piute Valley	11.00	
D-27-56	R6	RIVERINE	0.016843	305.7	NRPW	35.458286	-115.636159	Piute Valley	2.40	
D-27-58	R6	RIVERINE	0.027019	490.4	NRPW	35.457910	-115.637210	Piute Valley	2.40	
D-27-60	R6	RIVERINE	0.039135	710.3	NRPW	35.457053	-115.639481	Piute Valley	2.40	
D-27-68	R6	RIVERINE	0.073433	285.6	NRPW	35.466406	-115.613079	Piute Valley	11.20	27M6
D-27-69	R6	RIVERINE	0.077720	305.0	NRPW	35.468121	-115.607698	Piute Valley	11.10	
D-27-70	R6	RIVERINE	0.008116	147.3	NRPW	35.468406	-115.607458	Piute Valley	2.40	
D-27-71	R6	RIVERINE	0.125372	492.0	NRPW	35.468371	-115.607053	Piute Valley	11.10	
D-27-80	R6	RIVERINE	0.022623	410.6	NRPW	35.473306	-115.593187	Piute Valley	2.40	
D-27-83	R6	RIVERINE	0.092704	363.8	NRPW	35.474268	-115.589488	Piute Valley	11.10	
D-27-84	R6	RIVERINE	0.005686	103.2	NRPW	35.474399	-115.589678	Piute Valley	2.40	
D-27-86	R6	RIVERINE	0.404324	1586.7	NRPW	35.474784	-115.585377	Piute Valley	11.10	
D-27-87	R6	RIVERINE	0.395941	1553.8	NRPW	35.475499	-115.581241	Piute Valley	11.10	
D-27-88	R6	RIVERINE	0.036134	141.8	NRPW	35.475824	-115.580104	Piute Valley	11.10	
D-27-89	R6	RIVERINE	0.176417	883.3	NRPW	35.475044	-115.583209	Piute Valley	8.70	
D-27-92	R6	RIVERINE	0.090360	354.6	NRPW	35.475374	-115.583088	Piute Valley	11.10	
D-27-121	R6	RIVERINE	0.224153	513.9	NRPW	35.475765	-115.570119	Piute Valley	19.00	27MD5
D-27-124	R6	RIVERINE	0.020253	367.6	NRPW	35.474341	-115.563446	Piute Valley	2.40	
D-27-127	R6	RIVERINE	0.191982	753.4	NRPW	35.474122	-115.563372	Piute Valley	11.10	
D-27-130	R6	RIVERINE	0.084566	1674.4	NRPW	35.473446	-115.561957	Piute Valley	2.20	27D4
D-27-134	R6	RIVERINE	0.037278	676.6	NRPW	35.472335	-115.556231	Piute Valley	2.40	

Exhibit B1. Study Area Field Data for Areas Potentially Subject to Corps Jurisdiction, HUC-8 Death Valley-Lower Amargosa, Preferred Route Drainages, DesertXpress Project

Waters_Name	Cowardin_Code	HGM_Code	Area (acres)	Linear (ft)	Waters Types	Latitude (dd nad83)	Longitude (dd nad83)	Local_Waterway	width (OHWM)	HBG Data Field Point
D-27-135	R6	RIVERINE	0.010986	199.4	NRPW	35.472484	-115.555981	Piute Valley	2.40	
D-27-136	R6	RIVERINE	0.007741	140.5	NRPW	35.472512	-115.556233	Piute Valley	2.40	
D-27-137	R6	RIVERINE	0.036545	663.3	NRPW	35.471430	-115.553736	Piute Valley	2.40	
D-27-138	R6	RIVERINE	0.018353	333.1	NRPW	35.471554	-115.552679	Piute Valley	2.40	
D-27-139	R6	RIVERINE	0.007614	138.2	NRPW	35.471737	-115.552283	Piute Valley	2.40	
D-27-140	R6	RIVERINE	0.049609	900.4	NRPW	35.471175	-115.552115	Piute Valley	2.40	
D-27-141	R6	RIVERINE	0.162190	1177.5	NRPW	35.470665	-115.548718	Piute Valley	6.00	27M1
D-27-142	R6	RIVERINE	0.045173	231.5	NRPW	35.471240	-115.550452	Piute Valley	8.50	27MD3
D-27-144	R6	RIVERINE	0.020028	363.5	NRPW	35.470989	-115.549190	Piute Valley	2.40	
D-27-145	R6	RIVERINE	0.014573	317.4	NRPW	35.470659	-115.546574	Piute Valley	2.00	27D2
D-27-156	R6	RIVERINE	0.005464	95.2	NRPW	35.466127	-115.613253	Piute Valley	2.50	27D8
D-27-157	R6	RIVERINE	0.143611	568.7	NRPW	35.447192	-115.675613	Piute Valley	11.00	27MD10
D-27-158	R6	RIVERINE	0.094649	473.9	NRPW	35.446740	-115.675706	Piute Valley	8.70	
D-27-159	R6	RIVERINE	0.026992	489.9	NRPW	35.448417	-115.664052	Piute Valley	2.40	
D-27-160	R6	RIVERINE	0.013647	247.7	NRPW	35.448970	-115.663204	Piute Valley	2.40	
D-27-161	R6	RIVERINE	0.011774	213.7	NRPW	35.454406	-115.647608	Piute Valley	2.40	
D-27-162	R6	RIVERINE	0.080193	1455.5	NRPW	35.455119	-115.645362	Piute Valley	2.40	
D-27-163	R6	RIVERINE	0.051945	942.8	NRPW	35.455604	-115.643338	Piute Valley	2.40	
D-27-164	R6	RIVERINE	0.296584	5383.0	NRPW	35.464012	-115.619006	Piute Valley	2.40	
D-27-165	R6	RIVERINE	0.116193	2108.9	NRPW	35.475678	-115.575419	Piute Valley	2.40	
D-27-166	R6	RIVERINE	0.013163	238.9	NRPW	35.475790	-115.570716	Piute Valley	2.40	
D-27-167	R6	RIVERINE	0.010119	220.4	NRPW	35.443003	-115.679739	Piute Valley	2.00	
D-27-170	R6	RIVERINE	0.005344	97.0	NRPW	35.469902	-115.603478	Piute Valley	2.40	
D-27-171	R6	RIVERINE	0.008066	146.4	NRPW	35.470154	-115.602173	Piute Valley	2.40	
D-27-172	R6	RIVERINE	0.163774	2972.5	NRPW	35.469958	-115.602706	Piute Valley	2.40	
D-27-173	R6	RIVERINE	0.000996	21.7	NRPW	35.442873	-115.679833	Piute Valley	2.00	
		Totals:	**9.903974**	**67350.5**						

Exhibit B2

Field Data

(See attached CD in PDF format.)

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Abronia villosa	NL	=*A. v.* var. *aurita* =*A. v.* var. *villosa* =*Bastardiopsis eggersii*	DESERT SAND VERBENA	NL	NL	Herb
Acacia gregii	*Acacia gregii*	NA	CATCLAW ACACIA	FACU	FACU	Shrub
Achnatherum speciosum	NL	=*Stipa speciosa*	DESERT STIPA	NL	NL	Shrub
Adenophyllum porophylloides	NL	= *Dyssodia porophylloides*	SAN FELIPE DOGWEED	NL	NL	Shrub
Allenrolfea occidentalis	*Allenrolfea occidentalis*	NA	IODINE BUSH	FACW+	FACW	Shrub
Ambrosia dumosa	NL	= *Fransera dumosa*	BURROWEED	NL	NL	Shrub
Ambrosia eriocentra	NL	= *Fransera eriosentra*	RAGWEED	NL	NL	Shrub
Amsinckia tesselata	NL	= *A. conica* = *A. cuneata* = *A. mojavenensis* = *A. purpusii* = *A. rostellata* = *A. setosissima*	FIDDLE-NECK	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Amsinskia intermedeon	NL	NA	FIDDLE-NECK	NL	NL	Herb
Aristida purpurea	NL	=*A. p.* var. *fendleriana* =*A. p.* var. *longiseta* =*A. p.* var. *neallegi* =*A. p.* var. *parishii* =*A. p.* var. *purpurea* =*A. p.* var. *wrightii*	PURPLE THREE AWN	NL	NL	Herb
Asclepias californica	NL	=*A. c.* ssp. *greenei* =*A. c.* ssp. *californica*	CALIFORNIA MILKWEED	NL	NL	Herb
Asclepias curassavica	*Asclepias curassavica*	NA	SCARLET MILKWEED	FAC	NL	Herb
Atriplex canescens	*Atriplex canescens*	NA	FOUR-WINGED SALTBUSH	FACU	UPL	Shrub
Atriplex hymenelytra	NL	NA	MANY-FRUITED SALTBUSH	NL	NL	Shrub
Atriplex polycarpa	*Atriplex*	NA	MANY-FRUIT SALTBUSH	FACU	FACU	Shrub

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
	polycarpa					
Avena barbata	NL	*=A. hirsuta*	SLENDER WILD OAT	NL	NL	Herb
Baccharis brachyphylla	NL	NA	SHORT LEAVED BACCHARIS	NL	NL	Shrub
Baccharis salicifolia	*Baccharis glutinosa*	*=B. glutinosa* *=B. viminea* *=Molina salicifolia*	MULE FAT	FACW-	FACW	Shrub
Baccharis sarothroides	*Baccharis sarothroides*	NA	DESERT FALSE-WILLOW	FAC	NI	Shrub
Baileya spp.	NL	NA	DESERT MARIGOLD	NL	NL	Herb
Bouteloua barbata	NL	*=B. arenosa* *=Chrondrosum barbata* *=C. exile* *=C. microstachyum* *=C. polystachyum* *=C. subscorpiodes*	SIX WEEKS GRAMA	NL	NL	Herb
Brassica tournefortii	NL	NA	ASIAN MUSTARD	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Bromus madritensis	NL	*=Anisantha madritensis =A. matritensis =Bromus maritensis*	FOXTAIL CHESS	NL	NL	Herb
Bromus rubens	NL		RIPGUT BROME	NI	NI	Herb
Bromus tectorum	NL	*=Anisantha tectorum*	CHEAT GRASS	NL	NL	Herb
Camissonia boothii	NL	*=Oenothera decorticans*	BOOTH'S EVENING PRIMROSE	NL	NL	Herb
Camissonia brevipes	NL	*=Oenothera brevipes*	YELLOW CUPS	NL	NL	Herb
Cercidium floridum	NL	NA	BLUE PALO VERDE	NL	NL	Shrub
Cercidium microphyllum	NL	NA	FOOTHILLS PALO VERDE	NL	NL	Tree
Chaenactis fremontii	NL	NA	FREMONT PINCUSHION	NL	NL	Herb
Chamaesyce albomarginata	NL	*=Euphorbia albomarginata*	RATTLESNAKE WEED	NL	NL	Herb
Chaenactis	NL	*=C c.* var.	PEBBLE PINCUSHION	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
carphoclinia		*carphoclinia* =*C. c.* var. *peirsonii*				
Chenopodium album	*Chenopodium album*	NA	WHITE GOOSEFOOT	FAC	FACU	Herb
Chilopsis linearis	*Chilopsis linearis*	NA	DESERT WILLOW	FACW*	FAC	Tree
Chorizanthe brevicorny	NL	=*C. b.* var. *brevicorny* =*C. b.* var. *spathulata*	BRITTLE SPINEFLOWER	NL	NL	Herb
Chorizanthe rigida	NL	=*Acanthogonum rigidum*	SPINEY-HERB	NL	NL	Herb
Chrysothamnus paniculatus	NL	=*Ericameria paniculatus*	MOJAVE RABBITBRUSH	NL	NL	Shrub
Coleogyne ramosisssima	NL	NA	BLACKBUSH	NL	NL	Shrub
Cryptantha pterocarya	NL	=*C. p.* var. *purposii* =*C. p.* var *cyclopetera* =*C. p.* var. *pterocarya*	WINGED NUT FORGET ME NOT	NL	NL	Herb
Cylindropuntia	NL	=*Opuntia acanthocarpa*	BUCKHORN CHOLLA	NL	NL	Shrub

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
acanthocarpa						
*Cylindroopuntia arbuscula***	NL	*Unknown*	No info. available on this species. *C. arbuscula* may = typo	NL	NL	Shrub?
Cynodon dactylon	*Cynodon dactylon*	*=Capriola dactylon =C. aristiglumis =Panicum dactylon*	BERMUDA GRASS	FAC	FAC	Herb
Descurainia sophia	NL	*=Sisymbrium Sophia*	HERB SOPHIA	NL	NL	Herb
Encelia actoni	NL	*=E. virginensis ssp. actoni*	ACTON ENCELIA	NL	NL	Shrub
Encelia farinosa	NL	NA	BRITTLE BUSH	NL	NL	Shrub
Encelia frutescens	NL	*=Simsia frustescens*	BUTTON BRITTLE BUSH	NL	NL	Shrub
Encelia virginensis	NL	*= Frutescens* var. *virginensis*	NO COMMON NAME	NL	NL	Shrub
Ephedra nevadensis	NL	NA	NEVADA EPHEDRA	NL	NL	Shrub
Ephedra viridis	NL	NA	MORMON TEA	NL	NL	Shrub
Eriastrum densifolium	NL	NA	SHRUBBY ERIASTRUM	NL	NL	Shrub

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Ericameria cooperi	NL	=*Haplopappus cooperi*	COOPER'S GOLDENBUSH	NL	NL	Shrub
Ericameria laricifolia	NL	=*Haplopappus lacrifolia*	TURPENTINE BUSH	NL	NL	Shrub
Ericameria nauseosa	NL	=*E. n.* ssp. *consimilis* =*E. n.* var. *bernardina* =*E. n.* var. *ceruminosa* =*E. n.* var. *hololeuca* =*E. n.* var. *leiosperma* =*E. n.* var. *oreophila* =*E. n.* var. *speciosa* =*E. n.* var. *washoensis* =*Chrysothamnus nauseosus*	RUBBER RABBITBRUSH	NL	NL	Shrub
Ericameria paniculata	NL	=*Chrysothamnus paniculatus*	MOJAVE RABBITBRUSH	NL	NL	Shrub

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Ericameria pinifolia	NL	=*E. ericoides* ssp. *pinifolia* =*Haplopappus pinifolius*	PINE BUSH	NL	NL	Shrub
Eriogonum deflexum	NL	NA	FLAT TOPPED BUCKWHEAT	NL	NL	Herb
Eriogonum fasciculatum	NL	=*E. d.* var. *baratum* =*E. d.* var. *deflexum* =*E. d.* var. *nevadense* =*E. d.* var. *rectum*	CALIFORNIA BUCKWHEAT	NL	NL	Shrub
Eriogonum inflatum	NL	=*E. glaucum* =*E. inflatum* var. *inflatum*	DESERT TRUMPET	NL	NL	Shrub
Erioneuron pulchellum	NL	=*Triodia pulchella* =*Dasyochloa pulchella*	FLUFF GRASS	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Eriophyllum ambiguum/E. wallacei [sic]	NL	=*E. ambiguum* var. *ambiguum* =*E. ambigium* var. *paleaceum* =*Antherapeas wallaceei* =*Eriophyllum wallacei* var. *rubellum* =*E. w.* var. *wallacei* =*E. w.* var. *calvescens* =*Eriophyllum aureum*	ANNUAL WOOLLY SUNFLOWER/WALLACE'S WOOLLY DAISY	NL	NL	Herb
Erodium cicutarium	NL	=*Erodium cicutarium* ssp. *cicutarium* =*E. cicutarium* ssp. *jacquinianum*	COASTAL HERON'S BILL	NL	NL	Herb
Eschscholzia minutiflora	NL	=*E. coville* =*E. minutiflora* ssp. *twisselmanii* =*E. minutiflora* var. *darwinensis*	PYGMY POPPY	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
		=*E. minuscula*				
Gilia latifolia	NL	NA	BROADLEAF GILLIA	NL	NL	Herb
Gutierrezia sarothrae	NL	NA	MATCHWEED	NL	NL	Shrub
Hordeum moines	NL	NA	BARLEY	NL	NL	Herb
Hordeum murinum	*Hordeum leporinum*	=*H. m.* ssp. *glaucum* =*H. m.* ssp. *leporinum* =*H. m.* ssp. *murinum*	MOUSE BARLEY	NI	NI	Herb
Hymenoclea salsola	NL	=*H. m.* var. *patula* =*H. m.* var. *pentalepsis* =*H. m.* var. *salsola*	CHEESE BUSH	NL	NL	Shrub
Krameria parviflora	NL	NA	RHATANY	NL	NL	Shrub
Larrea tridentata	NL	=*L. divaricata* ssp. *tridentate* =*L. divaricata* =*L. tridentata* var. *arenaria* =*L. tridentate* var.	CREOSOTE BUSH	NL	NL	Shrub

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SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
		tridentata				
Lepidium fremontii	NL	=*L. fremontii* var. *fremontii* =*L. f.* var. *stipitatum*	DESERT ALYSSUM	NL	NL	Herb
Lepidium latifolium	*Lepidium latifolium*	NA	BROAD LEAFED PEPPER-GRASS	FACW	FAC	Herb
Lepidium spp.	*Lepidium* spp.	NA	PEPPER-GRASS	FAC	NO to FACW+ depending on species	Shrub
Lepidium virginicum	*Lepidium virginicum*	NA	POOR-MAN'S PEPPER-GRASS	FACU	FACU	Herb
Lepidospartum squamatum	Possibly *Baccharis sarothroides*	=*Lepidospartum squamatum* var. *palmeri* =*Lepidospartum squamatum* var. *squamatum* =*Baccharis*	SCALE BROOM	NL Or FAC	NL	Shrub

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
		sarathroides var. *pluricephala* =*Lepidospartim squamatum* var. *obtectum*				
Leptochloa uninervia	*Leptochloa uninervia*	NA	MEXICAN SPRANGLETOP	FACW	FACW	Herb
Leymus triticoides	*Elymus triticoides*	=*Elymus triticoides* =*E. condensatus* var. *triticoides* =*E. orcuttianus* =*E. triticoides* var. *pubescens*	VALLEY WILD RYE	FAC+	FAC+	Herb
Lupinus concinnus	NL	=*L. c.* var. *pallidus* =*L. c.* var. *orcutti* =*L. c.* var *optatus* =*L. c.* var. *concinnus* =*L. c.* var. *agardhianus* =*L. c.* ssp. *orcuttii* =*L. c.* ssp. *optatus* =*L. pallidus* =*L. agardhianus*	ELEGANT LUPINE	NL	NL	Herb

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Lycium andersonii	NL	=*L. a.* var. *andersonii* =*L. a.* var. *deserticola*	ANDERSON THORNBUSH	NL	NL	Shrub
Lycium cooperi	NL	NA	PEACH THORN	NL	NL	Shrub
Lycium parishii	NL	NONE	PARISH'S DESERT THORN	NL	NL	Shrub
Malacothrix coulteri	NL	= *Zollikoferia eluiensis* = *M.* var. *cognate*	SNAKE'S HEAD	NL	NL	Herb
Malacothrix glabrata	NL	= *M. californica* var. *glabrata*	DESERT DANDELION	NL	NL	Herb
Malva neglecta	NL	NA	COMMON MALLOW	NL	NL	Herb
Mentzelia spp.	NL	NA	STICK LEAF	NL	NL	Herb
Mimulus flemingii		=*M. parviflorus*	FLEMING MONKEYFLOWER	FACU-	NL	Herb
Mimulus fremontii	*Mimulus glabratus*	=*M. subsecundus eunanus fremontii* =*Mimulus glabratus* ssp. *fremontii*	FREMONT'S MONKEYFLOWER	OBL	OBL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Oenethera deltoides	NL	=*O. d.* ssp. *cognate* =*O. d.* ssp. *deltoides* =*O. d.* ssp. *howellii* =*O. d.* ssp. *piperi* =*O. d.* var. *cineracea*	BIRDCAGE EVENING PRIMROSE	NL	NL	Herb
Olea europea	NL	NA	OLIVE TREE	NL	NL	Tree
Opuntia basilaris	NL	NA	BEAVERTAIL CACTUS	NL	NL	Shrub
Parkinsonia aculeata	*Parkinsonia aculeata*	NA	JERUSALEM –THORN OR PALO VERDE	FACW*	NI	Tree
Pectocarya heterophylla [sic] * =*P. heterocarpa*	NL	=*P. penicillata* var. *heterocarpa*	CHUCKWALLA COMBSEED	NL	NL	Herb
Pectocarya platycarpa	NL	=*P. gracilis* =*P. linearis*	NUTTED BROAD COMB	NL	NL	Herb
Phacelia distans	NL	= *P. cinera* = *P. scabrella* = *P. distans* var.	COMMON PHACELIA	NL	NL	Herb

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		austalis				
Phacelia fremontii	NL	*=P. hullii*	FREMONT'S PHACELIA	NL	NL	Herb
Plantago ovata	NL	NA	DESERT INDIAN WHEAT	NL	NL	Herb
Pluchea sericea	*Pluchea sericea*	NA	ARROW WEED	FACW	FACW	Shrub
Polypogon monspeliensis	*Polypogon monspeliensis*	NA	ANNUAL RABBIT-FOOT GRASS	FACW+	FACW+	Herb
Populus fremontii	*Populus fremontii*	---	FREMONT'S COTTONWOOD	FACW	FACW*	Tree
Prosopis glandulosa	*Prosopis juliflora*	*=P. glandulosa* var. *torreyana* *=P. juliflora* var. *torreyana* *= P. ordorata*	HONEY MESQUITE	FACU	NI	Shrub
Pucinella lemonni	*Pucinella lemonni*	NA	LEMON'S ALKALI GRASS	FAC	FACW*	Herb
Rafinesquia neomexicana	NL	NA	CALIFORNIA CHICORY	NL	NL	Herb
Rumexhymenose palus	NL	NA	WILD RUBARB	NL	NL	Herb
Salazaria	NL	NA	BLADDERSAGE	NL	NL	Shrub

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mexicana						
Salix exigua	*Salix exigua*	NL	SANDBAR WILLOW	OBL	OBL	Shrub
Salix gooddingii	*Salix gooddingii*	---	GOODDING WILLOW	OBL	FACW	Tree
Salsola pestifer	*Salsola pestifer*	NA	RUSSIAN THISTLE	FACU	FACU	Herb
*Salsola tragus***	*Salsola kali/ Salsola pestifer*	=*S. australis* =*S. iberica* =*S. kali* var. *tenuifoli* =*S. pestifer* =*S. kali* var. *tenuifolia* =*S. kali* var. *tragus* =*S. ruthenica*	RUSSIAN THISTLE	FACU*/ FACU	FACU/ FACU	Herb
Salvia columbariae	NL	= *S. c.* var. *columbariae* =*S. c.* var. *ziegleri*	CHIA	NL	NL	Herb
Salvia dorrii	NL	=*S. d.* var. *dorrii* =*S. d.* var. *incana* =*S. d.* var. *pilosa*	DESERT SAGE	NL	NL	Shrub
Schismus arabicus	NL	NA	MEDITERRANEAN GRASS	NL	NL	Herb
Schismus barbatus	NL	= *Festuca barbata* = *S. calycinus*	MEDITERRANEAN GRASS	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
Senna armata	NL	= *Cassia armata*	DESERT SENNA, SPINY SENNA	NL	NL	Shrub
Sisymbrium altissimum	*Sisymbrium altissimum*	NA	TALL TUMBLE MUSTARD	FACU	FACU-	Herb
Spharalcea ambigua	NL	= *S. parvifolia*	APRICOT MALLOW	NL	NL	Shrub
Stanleya pinnata	NL	NA	DESERT PRINCE'S PLUME	NL	NL	Herb
Stephanomeria exigua	NL	NA	SMALL WIRELETTUCE	NL	NL	Herb
Stephanomeria pauciflora	NL	=*S. p.* var. *parishii* =*S. p.* var. *pauciflora* =*S. runcinata* var. *parishii* =*S. cinerea* =*S. lygoclesmoides* =*S. neomexicana* =*Lygodesmia pauciflora* =*Ptiloria pauciflora*	DESERT STRAW	NL	NL	Herb

LIST OF PLANT SPECIES ENCOUNTERED ALONG DRAINAGES WITHIN THE DESERT XPRESS PROJECT STUDY AREA

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Stephanomeria virgata	NL	NA	NL	NL	NL	Herb
Tamarix aphylla	*Tamarix aphylla*	NA	ATHEL TAMARISK	FACW-	FACW	Tree
Tamarix ramosissima	*Tamarix ramosissima*	NA	SALTCEDAR	FAC	FACW	Shrub
Thamnosma montana	NL	NA	TURPENTINE BROOM	NL	NL	Shrub
Triticum aestivum	NL	= *T. hybernum* = *T. macha* = *T. sativum* = *T. sphaerococcum* = *T. vulgare*	COMMON WHEAT	NL	NL	Herb
Typha angustifolia	*Typha angustifolia*	NA	NARROW LEAF CATTAIL	OBL	OBL	Herb
Ulmus pumila	NL	NONE	SIBERIAN ELM	NL	NL	Tree
Washingtonia filifera	*Washingtonia filifera*	NA	CALIFORNIA FAN PALM	FACW	NO	Tree
Yucca brevifolia	NL	=*Y. jaegeriana*	JOSHUA TREE	NL	NL	Tree
Yucca schidigera	NL	=*Y. californica*	MOJAVE YUCCA	NL	NL	Shrub

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SCIENTIFIC NAME (AS LISTED IN JSA DATA SHEETS)	SCIENTIFIC NAME IF AVAILABLE IN NWI	SYNONYMY (SOURCE: CALFLORA 2010)	COMMON NAME	REGION 0 (NWI) CA	REGION 8 (NWI) NV	STRATUM (H, S, T)
		=*Y. macrocarpa* =*Y. mohavensis*				

* = J.S.A. probably made a typographical error for this species.

**Using JSA taxonomy (*S. tragus)* we determined that in 1988, when the wetland manual was produced, this species could have been either *S. kali* (FACU*) or *S. pestifer* (FACU) (Region O), or FACU for both in Region 8.

NI = Not Indicated.

NL = Not Listed in NWI 1988.

Sources:

Calflora Database. 2010. Calflora Database was developed by the United States Forest Service working in collaboration with U.C. Berkeley. Available at: http://www.calflora.org/

National Wetlands Inventory and US Fish And Wildlife Service. 1988. National List of Plant Species that Occur in Wetlands. Compiled by Porter B. Reed, Jr., National Ecology Research Center, US Fish and Wildlife Service, St. Petersburg, Florida. In cooperation with US Army Corps of Engineers, US Environmental Protection Agency, and US Soil Conservation Service.

Exhibit B2

DesertXpress Field Data
For
Death Valley-Lower Amargosa Watershed (HUC 18090203)

HBG Watershed Number	HUC 12 Watershed Name	HBG Field Data	ICF Jones & Stokes Field Data	Comments
23	Halloran Summit	Yes	Yes	
24	Rock Tank	Yes	Yes	
25	Pachalka Spring-Kingston Wash	Yes	No	
26	Ord Tank	Yes	Yes	
27	Piute Valley	Yes	Yes	

Huffman-Broadway Group

Field Data Forms

For DesertXpress

HUC 12 Watershed *Halloran Summit*

HBG Watershed ID # 23

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

DesertXpress

Field Notebook

HBG Watershed ID # 23

Watershed Name: Halloran Summit

If found, please return to:

George Ball
Huffman-Broadway Group, Inc.
828 Mission Avenue
San Rafael, California 94901
415.925.2000
gball@h-bgroup.com

Return Postage Guaranteed

Potential Geomorphic OHWM Indicators

(A) Below OHW	(B) At OHW	(C) Above OHW
1) In-stream dunes 2) Crested ripples 3) Flaser bedding 4) Harrow marks 5) Gravel sheets to rippled sands 6) Meander bars 7) Sand tongues 8) Muddy point bars 9) Long gravel bars 10) Cobble bars behind obstructions 11) Scour holes downstream of obstructions 12) Obstacle marks 13) Stepped-bed morphology in gravel 14) Narrow berms and levees 15) Streaming lineations 16) Dessication/mud cracks 17) Armored mud balls 18) Knick Points	1) Valley flat 2) Active floodplain 3) Benches: low, mid, most prominent 4) Highest surface of channel bars 5) Top of point bars 6) Break in bank slope 7) Upper limit of sand-sized particles 8) Change in particle size distribution 9) Staining of rocks 10) Exposed root hairs below intact soil layer 11) Silt deposits 12) Litter (organic debris, small twigs and leaves) 13) Drift (organic debris, larger than twigs)	1) Desert pavement 2) Rock varnish 3) Clast weathering 4) Salt splitting 5) Carbonate etching 6) Depositional topography 7) Caliche rubble 8) Soil development 9) Surface color/tone 10) Drainage development 11) Surface relief 12) Surface rounding

F-1.1-91

Potential Vegetation OHWM Indicators

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1) Herbaceous marsh species 2) Pioneer tree seedlings 3) Sparse, low vegetation 4) Annual herbs, hydromesic ruderals 5) Perennial herbs, hydromesic clonals	1) Annual herbs, hydromesic ruderals 2) Perennial herbs, hydromesic clonals 3) Pioneer tree seedlings 4) Pioneer tree saplings	1) Annual herbs, xeric ruderals 2) Perennial herbs, non-clonal 3) Perennial herbs, clonal and non-clonal co-dominant 4) Mature pioneer trees, no young trees 5) Mature pioneer trees w/upland species 6) Late-successional species
Mesoriparian indicators	6) Pioneer tree seedlings 7) Sparse, low vegetation 8) Pioneer tree saplings 9) Xeroriparian species	5) Sparse, low vegetation Annual herbs, hydromesic 6) Ruderals 7) Perennial herbs, hydromesic clonals 8) Pioneer tree seedlings 9) Pioneer tree saplings 10) Xeroriparian species 11) Annual herbs, xeric ruderals	7) Xeroriparian species 8) Annual herbs, xeric ruderals 9) Perennial herbs, non-clonal 10) Perennial herbs, clonal and non-clonal codominent 11) Mature pioneer trees, no young trees 12) Mature pioneer trees, xeric understory 13) Mature pioneer trees w/upland species 14) Late-successional species 15) Upland species
Xeroriparian indicators	10) Sparse, low vegetation 11) Xeroriparian species 12) Annual herbs, xeric ruderals	12) Sparse, low vegetation 13) Xeroriparian species 14) Annual herbs, xeric ruderals	16) Annual herbs, xeric ruderals 17) Mature pioneer trees w/upland species 18) Upland species

HBG OHWM Field Data Sheet (Arid West)

NALLORAN SUMMIT

HBG Team # B 60/ES | Project Name: DesertXpress | HBG Sub-Basin # (1 – 41) 23 | HUC 12 # 180902082402

Drainage Data

Date M / D / Y	Time (24-Hour)	GPS Unit #	Sample Point #	Map Sheet Ref #	OHW Width	Active (A) or Inactive (I) Channel	Up (U) / or Down (D) Slope from Road	Photo (Y/N)	Below OHWM	At OHWM	Above OHWM	Comments
7-14-10	0144 pm	1	23MD1	C205	7'0"	A	N	N	A: D: 10	B: 11, 12, 13, 6 E:	C: F: 17	Use note pages at back of notebook for comments. Put comment number in block below. 1 Site Graded floodplain near culverts.
7-14-10	0159 pm	1	23MD2	C204	5'0"	A	D	N	A: D: 10	B: 6, 11, 16, 13 E:	C: F: 17	
7-14-10	0224 pm	1	23D3	C202	~~1/0~~ 24" 2.0	A	D	N	A: 5 D: 10	B: 6, 11, 12, 13 E:	C: F: 17	2 Traffic from entry of interchange ± 1/4 mile then across fence to GPS point
10.12.10	—	5	23D4		—	I	D	N	A: D:	B: E:	C: F:	Blocked
10.12.10	—	5	23D5		3.0	~~A~~ I	D	Y	A: D:	B: E:	C: F:	~~BLOCKED~~ RTH FIELD VERIFIED
10.12.10	—	5	23D6		—	I	D	Y	A: D:	B: E:	C: F:	Blocked
									A: D:	B: E:	C: F:	

Reference: D = Drainage; M = Manmade; MD = Major Drainage; R = River

F-1.1-92

ICF Jones & Stokes

Wetland Determination Data Forms – Arid West Region

For DesertXpress

HUC 12 Watershed *Halloran Summit*

HBG Watershed ID # 23

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08

Applicant/Owner: Circle Point State: CA Sampling Point: 60-2

Investigator(s): J. Halson, J. Lindbolt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion (LRR): D Lat: N -115.782954 Long: N 35.406342 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Datum (w-1', h-3", S-4:1) Photos: 8929-S, 8930-N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
Total Cover: 0			
Sapling/Shrub Stratum			
1. Hymenoclea salsola	5	Y	NL UPL
2.			
3.			
4.			
5.			
Total Cover: 5			
Herb Stratum			
1. Bromus madritensis ssp. rubens	15	Y	NL UPL
2. Bromus tectorum	5	Y	UPL NL
3. Erodium cicutarium	2	N	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover: 22			
Woody Vine Stratum			
1.			
2.			
Total Cover: 0			

% Bare Ground in Herb Stratum 74 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 27	x 5 = 135
Column Totals: 27 (A)	135 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: UO2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
8	10 YR 4/2						gravel sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: caliche

Depth (inches): 9

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Ind: discreet, LD

Sub comp: gravel, sand, silt, caliche

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08

Applicant/Owner: Circle Point State: CA Sampling Point: 60-3

Investigator(s): J. Halsey, J. Lindbolt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): D Lat: W -115.780519 Long: N 35.406998 Datum: NAD 83

Soil Map Unit Name: UA NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM W-11 h-6" S-4:1 Photos: 9824-N 9825-S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1. Hymenoclea salsola	3	Y	UPL NL
2.			
3.			
4.			
5.			
Total Cover:	3		
Herb Stratum			
1. Bromus madritensis ssp. rubens	20	Y	UPL NL
2. Erodium cicutarium	5	N	UPL NL
3. Bromus tectorum	2	N	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	27		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 73 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 30	x 5 = 150	
Column Totals: 30 (A)	150 (B)	

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 103

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
14	10 YR 4/2						gravelly sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: discreet/ confined, CL, CS, AM, GD, WS, SL, LD

C: [illegible] gravel and silt

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08
Applicant/Owner: Circle Point State: CA Sampling Point: 60-4
Investigator(s): J. Holson, J. Windholt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D Lat: W -115.776407 Long: N 35.409516 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: OHWM w- 1' h- 3" s- 4:1 Photos: 8922-S 8923-N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	Ø		
Herb Stratum			
1. Bromus madritensis ssp. rubens	30	Y	NL-UPL
2. Bromus tectorum	10	N	NL-UPL
3. Salsola tragus	20	Y	NL-UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:	60		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

Bare Ground in Herb Stratum 40 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 60	x 5 =	300
Column Totals: 60 (A)		300 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: UPL-4

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
18	10 YR 4/2						gravelly Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: S0, L0

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08

Applicant/Owner: Circle Point State: CA Sampling Point: 60-S

Investigator(s): S. Holson, J. Windholt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): D ~~Lat:~~ W -116.774281 ~~Long:~~ N 35.409402 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: OHWM W - 1' h - 3" s - 4:1 Photos: 8820 - N 8821 - S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Hymenoclea salsola	5	Y	UPL NL
2. Baccharis sarothroides	15	Y	UPL FAC
3.			
4.			
5.			
Total Cover:	20		
Herb Stratum			
1. Salsola tragus	15	Y	UPL NL
2. Erodium cicutarium	5	N	UPL NL
3. Bromus madritensis ssp. rubens	15	Y	UPL NL
4. Bromus tectorum	5	N	UPL NL
5.			
6.			
7.			
8.			
Total Cover:	40		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species	60	x 5 =	300
Column Totals:	100 (A)		306 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: [illegible] 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravelly Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ______ No ✓ Depth (inches): ____________

Water Table Present? Yes ______ No ✓ Depth (inches): ____________

Saturation Present? (includes capillary fringe) Yes ______ No ✓ Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I; LD, discreet

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/09

Applicant/Owner: Circle Point State: CA Sampling Point: 60-6

Investigator(s): J. Holson, J. Widdoes Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): D Lat: W -115.770553 Long: N 35.410755 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: OHWM w-1' h-3" s-4:1 Photos: 8918-S 8919-N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
Total Cover: 0			
Sapling/Shrub Stratum			
1. Hymenoclea salsola	3	Y	UPL NL
2.			
3.			
4.			
5.			
Total Cover: 3			
Herb Stratum			
1. Salsola tragus	30	Y	UPL NL
2. Erodium cicutarium	1	N	UPL NL
3. Bromus madritensis ssp. rubens	30	Y	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover: 61			
Woody Vine Stratum			
1.			
2.			
Total Cover: 0			

% Bare Ground in Herb Stratum 39 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species 64	x 5 = 320
Column Totals: 64 (A)	320 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

SOIL

Sampling Point: UPLD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravelly sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (Includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Ind: Discont, LD
Sub comp: gravel, sand, silt

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08
Applicant/Owner: CIRCLE POINT State: CA Sampling Point: 60-7
Investigator(s): S. Halson, S. Windbolt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 3%
Subregion (LRR): D Lat: W -115.766723 Long: N 35.411964 Datum: NAD
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: 0 HWSA | W - 1' h - 3" S - 4:1 | Photos: 8817-S 8816-N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		

Sapling/Shrub Stratum			
1. Hymenoclea salsola	2	Y	UPL NL
2. Atriplex canescens	1	Y	UPL FACU
3.			
4.			
5.			
Total Cover:	3		

Herb Stratum			
1. Erodium cicutarium	6	Y	UPL NL
2. Bromus tectorum	1	N	UPL NL
3. Bristida purpurea	1	N	UPL NL
4. Eriogonum deflexum	2	N	UPL NL
5. Salsola tragus (SC = S. kali)	15	Y	UPL (FACU*)
6.			
7. one = S. pestifer			(FACU)
8.			
Total Cover:	25		

Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

Bare Ground in Herb Stratum 75 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 28	x 5 = 140
Column Totals: 28 (A)	140 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: LAO-7

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravelly sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM ± : Discreet, SD, SS, LD

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08

Applicant/Owner: Circle Point State: CA Sampling Point: 60-S

Investigator(s): J. Holson, J. Lindbolt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 3%

Subregion (LRR): D Lat: W -115.763724 Long: N 35.413238 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: ○ HWM W - 1' h - 3" S - 4:1 Photos: 8914-S 8915-N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Sphaeralcea ambigua	1	Y	UPL NL
2. Hymenoclea salsola	3	Y	UPL NL
3.			
4.			
5.			
Total Cover:	4		
Herb Stratum			
1. Aristida purpurea	2	N	UPL NL
2. Erodium cicutarium	4	N	UPL NL
3. Salsola tragus	35	Y	UPL
4. Bromus tectorum	1	N	UPL NL
5. (= S. kali			(FACUT)
6. OR = S. pestifer)			(FACU)
7.			
8.			
Total Cover:	42		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 58 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 46	x 5 =	230
Column Totals: 46 (A)		230 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: (x)-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravelly, sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: Discreet, SD, LD, SS, poss. abandoned
Sub Comp: silt, sand, gravel, caliche

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DOX City/County: San Bernardino Sampling Date: 3/16/05

plicant/Owner: Circle Point State: CA Sampling Point: 61-7

Investigator(s): J. Halsey, T. Lindbolt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): D Lat: N -115.74D1061 ~~Long~~: N 35.421254 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation No, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation No, Soil _____, or ~~Hydrology~~ _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: OHWM W - 1' H - 3' S - 3:1 Photos: N-9905 S-9904

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
Total Cover: Ø			
Sapling/Shrub Stratum			
1. Ericameria laricifolia	2	Y	NL UPL
2. Sphaeralcea ambigua	2	Y	~~UPL~~ NL
3.			
4.			
5.			
Total Cover: 4			
Herb Stratum			
1. Erodium cicutarium	5	Y	UPL NL
2. Bromus tectorum	1	N	UPL NL
3. Salsola tragus	1	N	UPL
4. (= S. kali			(FACU)
5. or = S. pestifer)			(FACU)
6.			
7.			
8.			
Total Cover: 7			
Woody Vine Stratum			
1.			
2.			
Total Cover: Ø			

Bare Ground in Herb Stratum 93 % Cover of Biotic Crust 05

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 11	x 5 = 55	
Column Totals: 11 (A)	55 (B)	

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Sampling Point: C01-7

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravel Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: Discreet/confined, Cno present FAC-109 Ind. observed), CL, LD,

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSY City/County: San Bernardino Sampling Date: 3/15/08

Applicant/Owner: Circle Point State: Cal Sampling Point: C1-B

Investigator(s): J. Holson, J. Woodhurst Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): D ~~Lat:~~ W -115.743374 ~~Long:~~ N 35.420346 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, ~~Soil~~ ____, or ~~Hydrology~~ ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM W- 1' H- 3" S- 3:1 Photos: S-8906 N-8907

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	Ø		
Herb Stratum			
1. Erodium cicutarium	5	Y	NL UPL
2. Bromus tectorum	2	N	UPL NL
3. Salsola tragus	2	N	UPL
4. Aristida purpurea	5	Y	UPL NL
5. (S. kali			(FACU+)
6. and S. pestifer)			(FACU)
7.			
8.			
Total Cover:	14		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 86 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 14	x 5 = 70
Column Totals: 14 (A)	70 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

61-82

Sampling Point: 201-6

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
16	10 YR 4/2						gravel sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: Discreet/confined, CL, LD

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08

Applicant/Owner: Circle Point State: CA Sampling Point: 61-9

Investigator(s): S. Holsen, S. Windbelt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): D Lat: W -115.747732 Long: N 35.418888 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM w - 1' h - 3" s - 3:1 Photos: N - 8908 S - 8909

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	Ø		
Herb Stratum			
1. Aristida purpurea	7	Y	NL UPL
2. Erodium cicutarium	2	N	UPL NL
3. Amsinckia tessellata	2	N	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	11		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

Bare Ground in Herb Stratum 89 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 11	x 5 = 55
Column Totals: 11 (A)	55 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

61-92

Sampling Point: 1A-P

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 4/2						gravel Soil	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: Discont/confined, CO, LD

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/09

Applicant/Owner: Circle Point State: CA Sampling Point: C1-1D

Investigator(s): S. Helsen, J. Winkelt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR): D Lat: N 115.750589 Long: N 35.417840 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM | h - 1' | w - 3' | S - 3:1 | Photos: N - 8911 | S - 8910

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Ericameria laricifolia	1	Y	NL UPL
2.			
3.			
4.			
5.			
Total Cover:	1		
Herb Stratum			
1. Erodium cicutarium	12	Y	NL UPL
2. Salsola tragus	3	N	UPL
3. Bromus tectorum	4	Y	UPL NL
4. (= S. Kali			(FACU)
5. or = S. pestifer			(FACU)
6.			
7.			
8.			
Total Cover:	23		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 77 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 24	x 5 = 120
Column Totals: 24 (A)	120 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

61-102

Sampling Point: CH-10

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravel sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Ind: Discreet/confined, CL, FD, poss. abandoned, evidence of road runoff

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/16/08
Applicant/Owner: Circle Point State: CA Sampling Point: 61-11
Investigator(s): J. Halsor, J. Windhalt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR): D Lat: N -115.753654 Long: N 35.411958 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM W-4' h-3' s-9'

Photos: 8912-N 8913-S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Hymenoclea salsola	2	N	NL UPL
2.			
3.			
4.			
5.			
Total Cover:	2		
Herb Stratum			
1. Erodium cicutarium	6	Y	NL UPL
2. Bromus tectorum	4	Y	UPL NL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 12	x 5 = 60
Column Totals: 12 (A)	60 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

61-112

SOIL

Sampling Point: 61-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/2						gravelly sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______

Water Table Present? Yes ___ No ✓ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: discreet, evidence of road runoff, CS, PC

S.b comp: gravel, sand, silt

Exhibit B2

DesertXpress Field Data
For
Death Valley-Lower Amargosa Watershed (HUC 18090203)

HBG Watershed Number	HUC 12 Watershed Name	HBG Field Data	ICF Jones & Stokes Field Data	Comments
23	Halloran Summit	Yes	Yes	
24	Rock Tank	Yes	Yes	
25	Pachalka Spring-Kingston Wash	Yes	No	
26	Ord Tank	Yes	Yes	
27	Piute Valley	Yes	Yes	

Huffman-Broadway Group

Field Data Forms

For DesertXpress

HUC 12 Watershed *Rock Tank*

HBG Watershed ID # 24

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

DesertXpress

Field Notebook

HBG Watershed ID # 24

Watershed Name: Rock Tank

If found, please return to:

George Ball
Huffman-Broadway Group, Inc.
828 Mission Avenue
San Rafael, California 94901
415.925.2000
gball@h-bgroup.com

Return Postage Guaranteed

Potential Geomorphic OHWM Indicators

(A) Below OHW	(B) At OHW	(C) Above OHW
1) In-stream dunes 2) Crested ripples 3) Flaser bedding 4) Harrow marks 5) Gravel sheets to rippled sands 6) Meander bars 7) Sand tongues 8) Muddy point bars 9) Long gravel bars 10) Cobble bars behind obstructions 11) Scour holes downstream of obstructions 12) Obstacle marks 13) Stepped-bed morphology in gravel 14) Narrow berms and levees 15) Streaming lineations 16) Dessication/mud cracks 17) Armored mud balls 18) Knick Points	1) Valley flat 2) Active floodplain 3) Benches: low, mid, most prominent 4) Highest surface of channel bars 5) Top of point bars 6) Break in bank slope 7) Upper limit of sand-sized particles 8) Change in particle size distribution 9) Staining of rocks 10) Exposed root hairs below intact soil layer 11) Silt deposits 12) Litter (organic debris, small twigs and leaves) 13) Drift (organic debris, larger than twigs)	1) Desert pavement 2) Rock varnish 3) Clast weathering 4) Salt splitting 5) Carbonate etching 6) Depositional topography 7) Caliche rubble 8) Soil development 9) Surface color/tone 10) Drainage development 11) Surface relief 12) Surface rounding

Potential Vegetation OHWM Indicators

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1) Herbaceous marsh species 2) Pioneer tree seedlings 3) Sparse, low vegetation 4) Annual herbs, hydromesic ruderals 5) Perennial herbs, hydromesic clonals	1) Annual herbs, hydromesic ruderals 2) Perennial herbs, hydromesic clonals 3) Pioneer tree seedlings 4) Pioneer tree saplings	1) Annual herbs, xeric ruderals 2) Perennial herbs, non-clonal 3) Perennial herbs, clonal and non-clonal co-dominant 4) Mature pioneer trees, no young trees 5) Mature pioneer trees w/upland species 6) Late-successional species
Mesoriparian indicators	6) Pioneer tree seedlings 7) Sparse, low vegetation 8) Pioneer tree saplings 9) Xeroriparian species	5) Sparse, low vegetation Annual herbs, hydromesic 6) Ruderals 7) Perennial herbs, hydromesic clonals 8) Pioneer tree seedlings 9) Pioneer tree saplings 10) Xeroriparian species 11) Annual herbs, xeric ruderals	7) Xeroriparian species 8) Annual herbs, xeric ruderals 9) Perennial herbs, non-clonal 10) Perennial herbs, clonal and non-clonal codominent 11) Mature pioneer trees, no young trees 12) Mature pioneer trees, xeric understory 13) Mature pioneer trees w/upland species 14) Late-successional species 15) Upland species
Xeroriparian indicators	10) Sparse, low vegetation 11) Xeroriparian species 12) Annual herbs, xeric ruderals	12) Sparse, low vegetation 13) Xeroriparian species 14) Annual herbs, xeric ruderals	16) Annual herbs, xeric ruderals 17) Mature pioneer trees w/upland species 18) Upland species

IBG OHWM Field Data Sheet (Arid West)

ROCK TANK

GB Team # B 60/ES | Project Name: DesertXpress | HBG Sub-Basin # (1 – 41) 24 | HUC 12 # 180902031103

Drainage Data

Date (M / D / Y)	Time (24-Hour)	GPS Unit #	Sample Point #	Map Sheet Ref #	OHW Width	Active (A) or Inactive (I) Channel	Up (U) / or Down (D) Slope from Road	Photo (Y/N)	Below OHWM	At OHWM	Above OHWM	Comments
												Use note pages at back of notebook for comments. Put comment number in block below.
7-14-10	1241	1	24MD1	C206	6'3"	A	D	N	A: D: 10	B: 11,12,13,6 E:	C: F: 18	Thru culvert to under freeway
7-14-10	1035	1	24MD2	C206	4'0"	A	D	N	A: D: 10,11	B: 6,11,12,13 E:	C: F: 18	Thru culvert to under highway JTS site.
10.12.10	—	S	24MD3		—	I	D	Y	A: — D: —	B: — E: —	C: — F: —	Blocked
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	

Reference: D = Drainage; M = Manmade; MD = Major Drainage; R = River

ICF Jones & Stokes

Wetland Determination Data Forms – Arid West Region

For DesertXpress

HUC 12 Watershed *Rock Tank*

HBG Watershed ID # 24

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Dox City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 61-1
Investigator(s): SH, JW Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR): D Lat: N 35.429015 Long: W -115.718360 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: OHWM W 1' H 6" S 3:1 Photos 8857:N 8858:S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Salsola tragus	5	Y N	UPL
2. Bromus madritensis ssp. rubens	40	Y	UPL NL
3. Munroa inclita tessellata	1	N	UPL NL
4. Erodium cicutarium	1	N	UPL NL
5. Schismus barbatus	1	N	UPL NL
6. (= S. kali			(FACU)
7. OR = S. pestifer)			(FACU)
8.			
Total Cover:	47 49		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 51 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 21 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 0	x 3 =	0
FACU species 5	x 4 =	420
UPL species 47 46	x 5 =	210 235
Column Totals: 47 48 (A)		210 235 (B)

Prevalence Index = B/A = 5 4.90

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: SP-1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
14	10YR 4/2						silty gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Offsite T. Dimont/Canfield CL, LD.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSK City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 61-2
Investigator(s): SH, JSW Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR): D Lat: N -115.721808° Long: N 35.427972 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation NO, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: OHWM W-1' H-6" S 3:1 Photos 8859:S 8860:N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Hymenoclea salsola	4	Y	UPL NL
2.			
3.			
4.			
5.			
Total Cover:	4		
Herb Stratum			
1. Salsola tragus	2	N	UPL
2. Bromus madritensis ssp. rubens	45	Y	UPL NL
3. Amsinckia tessellata	3	N	UPL NL
4. Erodium cicutarium	2	N	UPL NL
5. Schismus barbatus	1	N	UPL NL
6. (= S. kali			(FACU*)
7. or = S. pestifer)			(FACU)
8.			
Total Cover:	53		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 47 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species 2	x 4 = 8
UPL species 57.55	x 5 = 285.75
Column Totals: 57 (A)	293.75 (B)

Prevalence Index = B/A = 5.4.96

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 61-2

SOIL

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
14	10YR 4/3						silty grave	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM ↑, confined, CL, LD

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 61-3
Investigator(s): JH, JW Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D ~~Lat~~ N -115.724773 ~~Long~~: N 35.426675 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation NO, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM w-1' h-3" s-3'! Photos 8962 :S 8961 :N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover: 0			
Sapling/Shrub Stratum			
1. Hymenoclea salsola	2	Y	UPL NL
2.			
3.			
4.			
5.			
Total Cover: 2			
Herb Stratum			
1. Salsola tragus	5	Y	UPL
2. Bromus fertaceus	4	Y	UPL NL
3. Bromus madritensis ssp. rubens	4	Y	UPL NL
4. Erodium circutarium	3	N	UPL NL
5. Amsinckia tessellata	2	N	UPL NL
6. Schismus barbatus	2	N	UPL NL
7. (= S. kali)			(FAC UL)
8. OR = S. pestifer)			(FACU)
Total Cover: 20			
Woody Vine Stratum			
1.			
2.			
Total Cover: 0			

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species 5	x 4 = 20
UPL species 2217	x 5 = 11085
Column Totals: 2222 (A)	11105 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

61-3

Sampling Point: _____

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10 YR 4/3						Loamy silt	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: CL, LD, discrete/confined

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: SI-4
Investigator(s): JH, SW Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR): D Lat: N - 115.729188 Long: N 35.425491 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE II
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation NO, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM W- 1' H- 3" S - 3" Photo: DSX-074 DSX-075

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Erodium cicutarium	10	Y	UPL NL
2. Salsola tragus	5	Y	UPL (FACU)
3. Amsinckia tessellata	1	N	UPL NL
4. Bromus tectorum	1	N	UPL NL
5. (= S. Kali)			(FACU+)
6. OR = S. pestifer)			(FACU)
7.			
8.			
Total Cover:	17		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 83 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 5	x 4 =	20
UPL species 17 + 12	x 5 =	85 60
Column Totals: 17 (A)		85 80 (B)

Prevalence Index = B/A = 84.88 4.71

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: G1-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
14	10 YR 4/3						Loamy silt	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DHWM I: CL, LD, discrete/confined

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: SL-S
Investigator(s): SH, JW Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D Lat: N 115.731949 Long: N 35.424311 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM | Bank - 1' | H - 3' | S - 3:1 | Photos 8865: N, 8866: S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	Ø		
Herb Stratum			
1. Salsola tragus	5	Y	UPL
2. Erodium cicutarium	5	Y	UPL/NL
3. Amsinckia tessellata	2	N	UPL/NL
4. (= S. kali			(FACU)
5. OR = S. pestifer)			(FACU)
6.			
7.			
8.			
Total Cover:	12		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 88 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	5	x 4 =	20
UPL species	17	x 5 =	6035
Column Totals:	12	(A)	6055 (B)

Prevalence Index = B/A = 504.58

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: C01-5

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 4/3						silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DHWM. I: C, LD, discreet/continued

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 61-6
Investigator(s): S. Holcom, J. Wilhelm Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 3%
Subregion (LRR): D Lat: W -115.735051 Long: N 35.423181 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM W-1' H-3" S-3:1 Photos 8867:S 8868:N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Erodium cicutarium	45	Y	UPL NL
2. Amsinckia tessellata	5	N	UPL NL
3. Bromus tectorum	2	N	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	52		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 49 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 52	x 5 =	260
Column Totals: 52 (A)		260 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: Col-6

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR 4/2						Sand gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ✓ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Ind: C5, Confined, CL, LD, SD

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/19/08
Applicant/Owner: Circle Point State: CA Sampling Point: 62-7
Investigator(s): J Halsey, J. Windhorst Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR): D Lat: 34.703033 Long: -115.784498 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation NO, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: OHWM: W-81, L-1', S-3'1 | BBS1:N BBS0:S Photos

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Hymenoclea salsola	8	Y	UPL NL
2. Ericameria laricifolia	4	Y	UPL NL
3. Baccharis sarothroides	10	Y	UPL FAC
4.			
5.			
Total Cover:	22		
Herb Stratum			
1. Bromus tectorum	10	Y	UPL NL
2. Bromus madritensis ssp. rubens	4	Y	UPL NL
3. Erodium cicutarium	6	Y	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	20		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 80 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species 10	x 3 = ____
FACU species ____	x 4 = ____
UPL species 42	x 5 = 210
Column Totals: 42 (A)	210 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 02-7

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
18+	10 YR 4/2						loamy silt	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM I: Confined, cl, CS, S, SL basin (crack soil [evidence of prolonged inundation])

• Change in veg w/in basin

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSY City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 62-8
Investigator(s): S. Holson, J. Windbelt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D ~~Lat:~~ N 35.432849 ~~Long:~~ W -115.707832 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, ~~Soil~~ ____, or ~~Hydrology~~ ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, ~~Soil~~ ____, or ~~Hydrology~~ ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:
OHW W: 40 H: 1 S: 3:1
9853 - North
9853 - South

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Baccharis sarothroides	8	Y	FAC UPL
2. Ericameria laricifolia	8	Y	UPL NL
3. Atriplex canescens	2	N	UPL FACU
4. Hymenoclea salsola	2	N	UPL NL
5.			
Total Cover:	20		
Herb Stratum			
1. Eradium cicutarium	20	Y	UPL NL
2. Schismus barbatus	2	N	UPL NL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	22		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 78 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 8	x 3 =	24
FACU species 2	x 4 =	8
UPL species 40 32	x 5 =	240 160
Column Totals: 42 (A)		210 192 (B)

Prevalence Index = B/A = 5 4.57

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: Pt. 8

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR		4/2				Sandy-Gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No Hydric Indicators - Distinct / Confined, Cl,

Soil Composition - Sand, Gravel,

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 62-9
Investigator(s): J. Hatsen, J Wiedbolt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR): D Lat: W -115.711142 Long: N 35.431750 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (if no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Non-jurisdictional

OHWM H 1'
H 3"
≤ 3:1

Photos 8855 - Facing South
8856 " North

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover: 0			
Sapling/Shrub Stratum			
1. Hymenoclea salsola	3	Y	UPL NL
2. Ambrosia dumosa	2	Y	UPL NL
3. Eriogonum latifolia	1	N	UPL NL
4. Ephedra viridis	1	N	UPL NL
5.			
Total Cover: 7			
Herb Stratum			
1. Schismus barbatus	3	Y	UPL NL
2. Erodium cicutarium	3	Y	UPL NL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 6			
Woody Vine Stratum			
1.			
2.			
Total Cover: 0			

% Bare Ground in Herb Stratum 94 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 13	x 5 = 65
Column Totals: 13 (A)	65 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

62-92

Sampling Point: CP.9

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16	10YR		4/2				Sandy/Gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No / Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM - Distinct (possibly abandoned).

Soil Comp - Sand, Gravel

Exhibit B2

DesertXpress Field Data
For
Death Valley-Lower Amargosa Watershed (HUC 18090203)

HBG Watershed Number	HUC 12 Watershed Name	HBG Field Data	ICF Jones & Stokes Field Data	Comments
23	Halloran Summit	Yes	Yes	
24	Rock Tank	Yes	Yes	
25	Pachalka Spring-Kingston Wash	Yes	No	
26	Ord Tank	Yes	Yes	
27	Piute Valley	Yes	Yes	

Huffman-Broadway Group

Field Data Forms

For DesertXpress

HUC 12 Watershed
Pachalka Spring-Kingston Wash

HBG Watershed ID # 25

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

DesertXpress

Field Notebook

HBG Watershed ID # 25

Watershed Name: Pachalka Spring-Kingston Wash

If found, please return to:

George Ball
Huffman-Broadway Group, Inc.
828 Mission Avenue
San Rafael, California 94901
415.925.2000
gball@h-bgroup.com

Return Postage Guaranteed

Potential Geomorphic OHWM Indicators

(A) Below OHW	(B) At OHW	(C) Above OHW
1) In-stream dunes 2) Crested ripples 3) Flaser bedding 4) Harrow marks 5) Gravel sheets to rippled sands 6) Meander bars 7) Sand tongues 8) Muddy point bars 9) Long gravel bars 10) Cobble bars behind obstructions 11) Scour holes downstream of obstructions 12) Obstacle marks 13) Stepped-bed morphology in gravel 14) Narrow berms and levees 15) Streaming lineations 16) Dessication/mud cracks 17) Armored mud balls 18) Knick Points	1) Valley flat 2) Active floodplain 3) Benches: low, mid, most prominent 4) Highest surface of channel bars 5) Top of point bars 6) Break in bank slope 7) Upper limit of sand-sized particles 8) Change in particle size distribution 9) Staining of rocks 10) Exposed root hairs below intact soil layer 11) Silt deposits 12) Litter (organic debris, small twigs and leaves) 13) Drift (organic debris, larger than twigs)	1) Desert pavement 2) Rock varnish 3) Clast weathering 4) Salt splitting 5) Carbonate etching 6) Depositional topography 7) Caliche rubble 8) Soil development 9) Surface color/tone 10) Drainage development 11) Surface relief 12) Surface rounding

Potential Vegetation OHWM Indicators

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1) Herbaceous marsh species 2) Pioneer tree seedlings 3) Sparse, low vegetation 4) Annual herbs, hydromesic ruderals 5) Perennial herbs, hydromesic clonals	1) Annual herbs, hydromesic ruderals 2) Perennial herbs, hydromesic clonals 3) Pioneer tree seedlings 4) Pioneer tree saplings	1) Annual herbs, xeric ruderals 2) Perennial herbs, non-clonal 3) Perennial herbs, clonal and non-clonal co-dominant 4) Mature pioneer trees, no young trees 5) Mature pioneer trees w/upland species 6) Late-successional species
Mesoriparian indicators	6) Pioneer tree seedlings 7) Sparse, low vegetation 8) Pioneer tree saplings 9) Xeroriparian species	5) Sparse, low vegetation Annual herbs, hydromesic 6) Ruderals 7) Perennial herbs, hydromesic clonals 8) Pioneer tree seedlings 9) Pioneer tree saplings 10) Xeroriparian species 11) Annual herbs, xeric ruderals	7) Xeroriparian species 8) Annual herbs, xeric ruderals 9) Perennial herbs, non-clonal 10) Perennial herbs, clonal and non-clonal codominent 11) Mature pioneer trees, no young trees 12) Mature pioneer trees, xeric understory 13) Mature pioneer trees w/upland species 14) Late-successional species 15) Upland species
Xeroriparian indicators	10) Sparse, low vegetation 11) Xeroriparian species 12) Annual herbs, xeric ruderals	12) Sparse, low vegetation 13) Xeroriparian species 14) Annual herbs, xeric ruderals	16) Annual herbs, xeric ruderals 17) Mature pioneer trees w/upland species 18) Upland species

HBG OHWM Field Data Sheet (Arid West)

PACHALKA SPRING-KINGSTON WASH

HBG Team # B 67 IES | Project Name: DesertXpress | HBG Sub-Basin # (1 – 41) 25 | HUC 12 # 180902031104

Drainage Data

Date (M / D / Y)	Time (24-Hour)	GPS Unit #	Sample Point #	Map Sheet Ref #	OHW Width	Active (A) or Inactive (I) Channel	Up (U) / or Down (D) Slope from Road	Photo (Y/N)	Below OHWM	At OHWM	Above OHWM	Comments
10-14-10	1153	1	25MD1 *	C208	~~14.3~~ 14'4" 0.5	A	D	N	A: 6 D: 10	B: 6, 11, 12, 13 E:	C: F: 17	RTH FIELD VERIFIED
10-14-10	1210	1	25MD2	C209	~~33.3~~ 33'4"	A	D	N	A: 5, 6, 14 D:	B: 6, 11, 12, 13 E:	C: F: 19	Draws to graded floodplain under freeway
10.12.10	—	S	25D3		0.7	A	D	Y	A: 6 D: 10	B: 6, 11, 12, 13 E:	C: F: 18	
10.12.10	—	S	25D4 *		0.5	A	D	Y	A: 6 D: 10	B: 6, 11, 12, 13 E:	C: F: 18	RTH FIELD VERIFIED
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	

Use note pages at back of notebook for comments. Put comment number in block below.

Reference: D = Drainage; M = Manmade; MD = Major Drainage; R = River

Exhibit B2

DesertXpress Field Data
For
Death Valley-Lower Amargosa Watershed (HUC 18090203)

HBG Watershed Number	HUC 12 Watershed Name	HBG Field Data	ICF Jones & Stokes Field Data	Comments
23	Halloran Summit	Yes	Yes	
24	Rock Tank	Yes	Yes	
25	Pachalka Spring-Kingston Wash	Yes	No	
26	Ord Tank	Yes	Yes	
27	Piute Valley	Yes	Yes	

Huffman-Broadway Group

Field Data Forms

For DesertXpress

HUC 12 Watershed *Ord Tank*

HBG Watershed ID # 26

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

DesertXpress

Field Notebook

HBG Watershed ID # 26

Watershed Name: Ord Tank

If found, please return to:

George Ball
Huffman-Broadway Group, Inc.
828 Mission Avenue
San Rafael, California 94901
415.925.2000
gball@h-bgroup.com

Return Postage Guaranteed

Potential Geomorphic OHWM Indicators

(A) Below OHW	(B) At OHW	(C) Above OHW
1) In-stream dunes 2) Crested ripples 3) Flaser bedding 4) Harrow marks 5) Gravel sheets to rippled sands 6) Meander bars 7) Sand tongues 8) Muddy point bars 9) Long gravel bars 10) Cobble bars behind obstructions 11) Scour holes downstream of obstructions 12) Obstacle marks 13) Stepped-bed morphology in gravel 14) Narrow berms and levees 15) Streaming lineations 16) Dessication/mud cracks 17) Armored mud balls 18) Knick Points	1) Valley flat 2) Active floodplain 3) Benches: low, mid, most prominent 4) Highest surface of channel bars 5) Top of point bars 6) Break in bank slope 7) Upper limit of sand-sized particles 8) Change in particle size distribution 9) Staining of rocks 10) Exposed root hairs below intact soil layer 11) Silt deposits 12) Litter (organic debris, small twigs and leaves) 13) Drift (organic debris, larger than twigs)	1) Desert pavement 2) Rock varnish 3) Clast weathering 4) Salt splitting 5) Carbonate etching 6) Depositional topography 7) Caliche rubble 8) Soil development 9) Surface color/tone 10) Drainage development 11) Surface relief 12) Surface rounding

Potential Vegetation OHWM Indicators

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1) Herbaceous marsh species 2) Pioneer tree seedlings 3) Sparse, low vegetation 4) Annual herbs, hydromesic ruderals 5) Perennial herbs, hydromesic clonals	1) Annual herbs, hydromesic ruderals 2) Perennial herbs, hydromesic clonals 3) Pioneer tree seedlings 4) Pioneer tree saplings	1) Annual herbs, xeric ruderals 2) Perennial herbs, non-clonal 3) Perennial herbs, clonal and non-clonal co-dominant 4) Mature pioneer trees, no young trees 5) Mature pioneer trees w/upland species 6) Late-successional species
Mesoriparian indicators	6) Pioneer tree seedlings 7) Sparse, low vegetation 8) Pioneer tree saplings 9) Xeroriparian species	5) Sparse, low vegetation Annual herbs, hydromesic 6) Ruderals 7) Perennial herbs, hydromesic clonals 8) Pioneer tree seedlings 9) Pioneer tree saplings 10) Xeroriparian species 11) Annual herbs, xeric ruderals	7) Xeroriparian species 8) Annual herbs, xeric ruderals 9) Perennial herbs, non-clonal 10) Perennial herbs, clonal and non-clonal codominent 11) Mature pioneer trees, no young trees 12) Mature pioneer trees, xeric understory 13) Mature pioneer trees w/upland species 14) Late-successional species 15) Upland species
Xeroriparian indicators	10) Sparse, low vegetation 11) Xeroriparian species 12) Annual herbs, xeric ruderals	12) Sparse, low vegetation 13) Xeroriparian species 14) Annual herbs, xeric ruderals	16) Annual herbs, xeric ruderals 17) Mature pioneer trees w/upland species 18) Upland species

HBG OHWM Field Data Sheet (Arid West)

GB Team # | Project Name: DesertXpress | HBG Sub-Basin # (1 – 41) 26 - ORD TANK | HUC 12 # 180902031101

Drainage Data

Date (M / D / Y)	Time (24-Hour)	GPS Unit #	Sample Point #	Map Sheet Ref #	OHW Width	Active (A) or Inactive (I) Channel	Up (U) / or Down (D) Slope from Road	Photo (Y/N)	Below OHWM	At OHWM	Above OHWM	Comments
5/14 2010	1131	1	26D1	C208	1.8 ~~22"~~	A	D	N	A: 16 D: 10	B: 6, 11, 12, 13 E:	C: F: 18	Drainage off of freeway in concrete-lined structure.
	— NO GPS DATA POINT RECORDED —											
↓	1140	1	26MD 1 *	C208 ~~NO GPS POINT~~	16'0"	A	D	N	A: 1, 7 D: 10	B: 6, 11, 12, 13 E:	C: F: 18	Drains to manmade floodplain under fwy. J+S site.
10.12.10	—	5	26MD 2. *		16.0 ~~0.5~~	A	D	Y	A: 1, 7 D: 10	B: 6, 11, 12, 13 E:	C: F: 18	REVERIFIED ~~BFRTH~~
10.12.10	—	5	26D3		1.0	A	D	Y	A: 1, 7 D: 16	B: 6, 11, 12, 13 E:	C: F: 18	
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	

Reference: D = Drainage; M = Manmade; MD = Major Drainage; R = River

ICF Jones & Stokes

Wetland Determination Data Forms – Arid West Region

For DesertXpress

HUC 12 Watershed *Ord Tank*

HBG Watershed ID # 26

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Desert Xpress City/County: San Bernardino Sampling Date: 3/9/08
Applicant/Owner: Circle Point State: CA Sampling Point: 62-4
Investigator(s): A. Durchardt, M. Widdowson Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%):
Subregion (LRR): D Lat: W -115.668325 Long: N 35.441612 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology Y* significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: Data Pt describes a depressional area in channel that has relatively vigorous growth of UPL weeds. OHWM indicators refer to channel.

OHWM
Width 446 ft
Height 1 ft
Length ____ ft
Side Slope 3:1

Photos with description
010 Facing N
011 " S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. None			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Descurainia Sophia	20	Y	NL UPL
2. Bromus rubens	30	Y	NI NL
3. Amsinkia tesselata	10	N	UPL NL
4. Silybum sp	5	N	UPL NL or FACU
5.			
6.			
7.			
8.			
Total Cover:	65		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 5

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 3565	x 5 =	175325
Column Totals: 3565 (A)		175325 (B)

Prevalence Index = B/A = 5.00

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: B2-4

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR3/3	100					sl	
1-3	10YR4/2	100					sl	
3-4	10YR4/2	100					ls	moist. below 3 inches
4-5	10YR4/2	100					loam	organic component
5-6	10YR4/2	100					ls	
6-7	10YR4/2	100					clay	
7-8	2.5Y4/3	100					sandy clay	
8-10	10YR7/2	100					sandy clay	pale parent material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✓ Stratified Layers (A5) (LRR C) NOT D
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks: Sediment is sorted - stratified layers

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): >10

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >10

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data point is in depressional area in wash/creek that ponds underneath and to the north of I15.

OHWM Indicators (use abbreviations): CS, S, PC, sd

Exhibit B2

DesertXpress Field Data
For
Death Valley-Lower Amargosa Watershed (HUC 18090203)

HBG Watershed Number	HUC 12 Watershed Name	HBG Field Data	ICF Jones & Stokes Field Data	Comments
23	Halloran Summit	Yes	Yes	
24	Rock Tank	Yes	Yes	
25	Pachalka Spring-Kingston Wash	Yes	No	
26	Ord Tank	Yes	Yes	
27	Piute Valley	Yes	Yes	

Huffman-Broadway Group

Field Data Forms

For DesertXpress

HUC 12 Watershed *Piute Valley*

HBG Watershed ID # 27

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

DesertXpress

Field Notebook

HBG Watershed ID # 27

Watershed Name: Piute Valley

If found, please return to:

George Ball
Huffman-Broadway Group, Inc.
828 Mission Avenue
San Rafael, California 94901
415.925.2000
gball@h-bgroup.com

Return Postage Guaranteed

Potential Geomorphic OHWM Indicators

(A) Below OHW	(B) At OHW	(C) Above OHW
1) In-stream dunes 2) Crested ripples 3) Flaser bedding 4) Harrow marks 5) Gravel sheets to rippled sands 6) Meander bars 7) Sand tongues 8) Muddy point bars 9) Long gravel bars 10) Cobble bars behind obstructions 11) Scour holes downstream of obstructions 12) Obstacle marks 13) Stepped-bed morphology in gravel 14) Narrow berms and levees 15) Streaming lineations 16) Dessication/mud cracks 17) Armored mud balls 18) Knick Points	1) Valley flat 2) Active floodplain 3) Benches: low, mid, most prominent 4) Highest surface of channel bars 5) Top of point bars 6) Break in bank slope 7) Upper limit of sand-sized particles 8) Change in particle size distribution 9) Staining of rocks 10) Exposed root hairs below intact soil layer 11) Silt deposits 12) Litter (organic debris, small twigs and leaves) 13) Drift (organic debris, larger than twigs)	1) Desert pavement 2) Rock varnish 3) Clast weathering 4) Salt splitting 5) Carbonate etching 6) Depositional topography 7) Caliche rubble 8) Soil development 9) Surface color/tone 10) Drainage development 11) Surface relief 12) Surface rounding

Potential Vegetation OHWM Indicators

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1) Herbaceous marsh species 2) Pioneer tree seedlings 3) Sparse, low vegetation 4) Annual herbs, hydromesic ruderals 5) Perennial herbs, hydromesic clonals	1) Annual herbs, hydromesic ruderals 2) Perennial herbs, hydromesic clonals 3) Pioneer tree seedlings 4) Pioneer tree saplings	1) Annual herbs, xeric ruderals 2) Perennial herbs, non-clonal 3) Perennial herbs, clonal and non-clonal co-dominant 4) Mature pioneer trees, no young trees 5) Mature pioneer trees w/upland species 6) Late-successional species
Mesoriparian indicators	6) Pioneer tree seedlings 7) Sparse, low vegetation 8) Pioneer tree saplings 9) Xeroriparian species	5) Sparse, low vegetation Annual herbs, hydromesic 6) Ruderals 7) Perennial herbs, hydromesic clonals 8) Pioneer tree seedlings 9) Pioneer tree saplings 10) Xeroriparian species 11) Annual herbs, xeric ruderals	7) Xeroriparian species 8) Annual herbs, xeric ruderals 9) Perennial herbs, non-clonal 10) Perennial herbs, clonal and non-clonal codominent 11) Mature pioneer trees, no young trees 12) Mature pioneer trees, xeric understory 13) Mature pioneer trees w/upland species 14) Late-successional species 15) Upland species
Xeroriparian indicators	10) Sparse, low vegetation 11) Xeroriparian species 12) Annual herbs, xeric ruderals	12) Sparse, low vegetation 13) Xeroriparian species 14) Annual herbs, xeric ruderals	16) Annual herbs, xeric ruderals 17) Mature pioneer trees w/upland species 18) Upland species

HBG OHWM Field Data Sheet (Arid West)

HGB Team # | Project Name: DesertXpress | HBG Sub-Basin # (1 – 41) 27 - PAUTE VALLEY | HUC 12 #

Drainage Data

Date (M / D / Y)	Time (24-Hour)	GPS Unit #	Sample Point #	Map Sheet Ref #	OHW Width	Active (A) or Inactive (I) Channel	Up (U) / or Down (D) Slope from Road	Photo (Y/N)	Below OHWM	At OHWM	Above OHWM	Comments
5/13	1650	5	27M1		6'	A	D	N	A: 10,13,15 D: NONE	B: none E: 6	C: ~~12,13~~ 1,3,12 F: 15,5,18	Description is established for "M"
5/13	1653	5	~~27D1~~ 27D2		~~2.0~~ 2.5'	A	D	N	A: 13,12,18 D: NONE	B: 11,12,13,2 E: 1	C: 12 F: ~~18~~ 18,16	
5/13	1700	5	~~27MD2~~ 27MD3		~~8.5~~ 8.5	A	U	Y	A: 2,15 D: 4,10,12	B: 2,11,12,~~13~~ 13 E: 3,4,11	C: 7,9,12 F: 16,18	
5/13	1710	5	~~27D3~~ 27D4		~~2.2~~ 2.6'	A	U	Y	A: 1,11,13 D: 4,7,10	B: 2,3,10,12,13 E: 1,5,12	C: 9,12 F: 18,16	
5/13	1735	5	~~27MD4~~ 27MD5		19'	A	U	Y	A: 10,11,13,15 D: 2,3,4,5,7,10	B: 2,4,6,10,12,13 E: 5,6,11,12	C: 1,3,9,10,12 F: 15,16,18	
5/13	1748	5	~~27M5~~ 27M6		~~11.2~~ 11.5'	A	D	N	A: 10,13,15 D: none	B: none E: 6	C: 1,3,12 F: ~~5,15,18~~ 5,15,18	
5/13	1755	5	~~27I1~~ 27i7		1'	I	U	Y	A: ~~13~~ 13 D: none	B: 9 E: 5,12	C: 2,3,7,10 F: 15,16,18	inactive

Reference: D = Drainage; M = Manmade; MD = Major Drainage; R = River

HBG OHWM Field Data Sheet (Arid West)

HGB Team # | Project Name: DesertXpress | HBG Sub-Basin # (1 – 41) 27 - PIUTE VALLEY | HUC 12 #

Drainage Data

Date (M / D / Y)	Time (24-Hour)	GPS Unit #	Sample Point #	Map Sheet Ref #	OHW Width	Active (A) or Inactive (I) Channel	Up (U) / or Down (D) Slope from Road	Photo (Y/N)	Below OHWM	At OHWM	Above OHWM	Comments
5/13	1805	5	~~27D3~~ 27D8		2.5	A	U	N	A: 1,11,13 D: 4,7,10	B: 2,3,10,12,13 E: 1,5,12 ~~2,6,8,9,10,13~~	C: 7,9,12 F: 13,16	Use note pages at back of notebook for comments. Put comment number in block below.
5/13	1830	5	~~27MD2~~ 27MD9		6.10	A	U	Y	A: 1,2,5,6,7,15 ~~6,8,9,10~~ D: 3,7,10	B: 2,9,11,12,13 E: 5,12	C: 1,3,9,7,12, 10 F: 5,15,18	
									A: D:	B: E:	C: F:	
05/15 2010	1616	4	27MD10		11.0	A	U	Y	A: 5,6,7,9,11,12, 13,15,18 D: 10,12	B: 2,3 (low), 5,6, 7,8,11,12,13 E: 12,14	C: 6,8,10,11,12 F: 18	Cima exit
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	
									A: D:	B: E:	C: F:	

Reference: D = Drainage; M = Manmade; MD = Major Drainage; R = River

ICF Jones & Stokes

Wetland Determination Data Forms – Arid West Region

For DesertXpress

HUC 12 Watershed *Piute Valley*

HBG Watershed ID # 27

Within Death Valley-Lower Amargosa Watershed (HUC 18090203)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Desert Xpress City/County: San Bern Sampling Date: 3/8/08
Applicant/Owner: Circle Point State: CA Sampling Point: b2-1
Investigator(s): Amanda Duchardt, MWH Section, Township, Range: SBBM
Landform (hillslope, terrace, etc.): Valley Flor Local relief (concave, convex, none): Concave Slope (%): _____
Subregion (LRR): D Lat: 34.115.107712 Long: N 35.446958 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ✓
Hydric Soil Present? Yes _____ No ✓
Wetland Hydrology Present? Yes _____ No ✓
Is the Sampled Area within a Wetland? Yes _____ No ✓

Remarks:
CDFG bank-to-bank - 15'

OHWM Width 8 ft, Height 2 ft, Length _____ ft, Side Slope 3:1

Photos (with description)
001 - Facing E
002 - Facing W

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Use scientific names.)			
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Encelia farinosa	15	Y	UPL
2. Chrysothamnus paniculatus	5	N	UPL
3. Gutierrezia sarothrae			NL
4.			
5.			
Total Cover: 20			
Herb Stratum			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 20	x 5 =	100
Column Totals: 20 (A)		100 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Sampling Point: 62-1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 5/3	100%	None				S	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): >12

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >12

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Indicators (use abbreviations): c/ F-1-1-103 sediment, litter + debris, scour

Transition (use abbreviations): sand, gravel

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Desert Xpress City/County: San Bernardino Sampling Date: 3/9/08
Applicant/Owner: Circle Point State: CA Sampling Point: B2-2
Investigator(s): A. Durchardt, M Wilderson Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%):
Subregion (LRR): D Lat: W-115.674419 Long: N 35 44 55.6 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:
CDFG bank-bank - 25' x 6' deep

OHWM Width 12 ft, Height 2 ft, Length ____ ft, Side Slope 1:1

Photos (with description)
007 facing S
008 facing N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			NL
Sapling/Shrub Stratum			
1. Gutierrezia sarothrae	5	Y	UPL
2.			
3.			
4.			
5.			
Total Cover: 5			
Herb Stratum			
1. Stanleya pinnata	2	Y	NL UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 2			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 98 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 7	x 5 =	35
Column Totals: 7 (A)		35 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

SOIL

Sampling Point: 62-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 5/3	100						gravel, silt

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): none

Water Table Present? Yes _____ No ✓ Depth (inches): >10

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): >10

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Artificially excavated ditch that captures "natural" runoff & diverts water to 62-1. Separated from I5 by berm. Parallels freeway. See aerial photos.

OHWM Indicators (use abbreviations): Sediment sorting

Primary tributary substrate composition (use abbreviations): Gravel Sand silt

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Desert Xpress City/County: San Berdo. Sampling Date: 3/9/08
Applicant/Owner: CirclePoint State: CA Sampling Point: 62-3
Investigator(s): A Durchardt M Widdowson Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Slope (%):
Subregion (LRR): D Lat: N 34.116761493 Long: W 115,447038 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No ✓
Hydric Soil Present? Yes No ✓
Wetland Hydrology Present? Yes No ✓
Is the Sampled Area within a Wetland? Yes No ✓

Remarks:

OHWM
Width 6 ft
Height 0.5 ft
Length ft
Side Slope >4:1

Photos with description
009 Facing E

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum None			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum None			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A = 0

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes No ✓

Remarks: Channel has no veg.

Sampling Point: 62-3

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 5/3	100						Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): none

Water Table Present? Yes _____ No ✓ Depth (inches): >17

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): >12

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Indicators (use abbreviations): Scour-167 DC.

Primary tributary substrate composition (use abbreviations): Sand

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Desert Xpress City/County: San Bernd'o Sampling Date: 3/9/08
Applicant/Owner: Circle Point State: CA Sampling Point: 62-5
Investigator(s): A Durchardt, M Widdowson Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Concave Slope (%):
Subregion (LRR): D Lat: W -115.671609 Long: N 35.442512 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:

OHWM
Width 12 ft
Height 1.5 ft
Length ____ ft
Side Slope >4:1

Photos (with description)
012 Facing N (downstream)
013 Facing S (upstream)

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Atriplex canescens	8	Y	FACW UPL
2.			
3.			
4.			
5.			
Total Cover: 8			
Herb Stratum			
1. Sisymbrium irio	25	Y	UPL NL
2. Erodium cicutarium	15	Y	UPL NL
3. Bromus rubens	10	N	UPL NL
4. Schismus sp. (arabicus / barbatus)	5	N	UPL NL
5.			
6.			
7.			
8.			
20% threshold = 11% Total Cover: 55			
Woody Vine Stratum			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 45 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species 33	x 4 = 132
UPL species 1630	x 5 = 3150
Column Totals: 63 (A)	3282 (B)

Prevalence Index = B/A = 54.48

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 62-5

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 4/4	100					Sandy Loam	
4-	10YR 7/2	100						Parent material - decomposing bedrock

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: bed rock

Depth (inches): 4

Hydric Soil Present? Yes ___ No ✓

Remarks:

Shovel refusal at 4 inches

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >4

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >4

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Indicators (use abbreviations): Scour 1-16" in ft. shelving

Sediment composition (use abbreviations): Snd & Gravel Cobble

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08

Applicant/Owner: Circle Point State: CA Sampling Point: 64-1

Investigator(s): J. Holsen, J Windbolt Section, Township, Range:

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR): D Lat: N -115.588674 Long: N 35.474433 Datum: NAD 83

Soil Map Unit Name: N/A NWI classification: N/A ZONE 11

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓

Hydric Soil Present? Yes ____ No ✓

Wetland Hydrology Present? Yes ____ No ✓

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: OHWM 8' W - H - 6" S - 4:1

Photos 9944 - South 9945 - North

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1. Encelia frutescens	4	Y	UPL NL
2. Fricamera laricifolia	3	Y	UPL NL
3. Atriplex canescens	1	N	UPL FACU
4.			
5.			
Total Cover:	4		
Herb Stratum			
1. Erodium cicutarium	2	Y	UPL NL
2. Schismus barbatus	1	Y	UPL NL
3. Aristida purpurea	1	N	UPL NL
4.			
5.			
6.			
7.			
8.			
Total Cover:	4		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 96 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)

Total Number of Dominant Species Across All Strata: 45 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species 1	x 4 = 4
UPL species 12 11	x 5 = 6055
Column Totals: 12 12 (A)	6059 (B)

Prevalence Index = B/A = 504.92

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: C04-1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR						Gravel/Cobble	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: Riprap

Depth (inches): 6"

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

other indicators - Confined, C1, PC

Soil Composition - Gravel, cobble, riprap.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: C4-2
Investigator(s): S. Holson, S. Halvorsen Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 5%
Subregion (LRR): D Lat: N 115.601566 Long: N 35.470532 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A Zone 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM | W 3' | N 3' | S 4:1 | Photos: 8847: S, 8846: N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Eriogonum fasciculatum	7	Y	UPL NL
2. Hymenoclea salsola	7	Y	UPL NL
3. Lycium cooperi	4	N	UPL NL
4. Ephedra viridis	5	N	UPL NL
5. Ericameria laricifolia	4	N	UPL NL
Total Cover:	27		
Herb Stratum			
1. B. tectorum	10	Y	UPL NL
2. Erodium cicutarium	4	Y	UPL NL
3. Aristida purpurea	2	N	UPL NL
4. Achnatherum speciosum	1	N	UPL NL
5.			
6.			
7.			
8.			
Total Cover:	17		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 83 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 44	x 5 = 220
Column Totals: 44 (A)	220 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 164-2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
8	10YR 4/3						gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

NHWM T: discrete/confined, CL, LS, LSD, SS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: GG-3
Investigator(s): S. Holson, J. Windbolt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D ~~Lat:~~ W -115.607487 ~~Long:~~ N 35.468233 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM w - 30' h - 6" s - 2:1 Photos 8848 - South 8849 - North

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1. Baccharis salicifolius	25	Y	FAC ~~UPL~~
2. Hymenoclea salsola	4	N	~~UPL~~ FAC
3.			
4.			
5.			
Total Cover:	29		
Herb Stratum			
1. Erodium cicutarium	2	Y	UPL NL
2. Salsola tragus	1	Y	UPL (FACU)
3. Eriogonum inflatum	1	Y	UPL NL
4. (= S. kali or S. pestifer)			(FACU*)
5.			(FACU)
6.			
7.			
8.			
Total Cover:	4		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 96 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: ~~Ø~~ 1 (A)
Total Number of Dominant Species Across All Strata: 43 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: ~~Ø~~ 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	25	x 3 =	75
FACU species	1	x 4 =	4
UPL species	337	x 5 =	1685
Column Totals:	33 (A)		1764 (B)

Prevalence Index = B/A = ~~Ø~~ 53.45

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

1816 228 9900 166467

64-3

Sampling Point: [illegible]

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
18+	10YR		4/6				Sand/Gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Indicators - Confined, C1, S, SS,

Soil Composition - Gravel, Sand, riprap.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: SS-1
Investigator(s): S. Halsan, J. Windholt Section, Township, Range:
Landform (hillslope, terrace, etc.): Toe slope Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D Lat: N -115.55532 Long: N 35.49152 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM width 10 ft height 6" slope 2:1 | Photos 8831 8832

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Ericameria laricifolia	3	Y	UPL NL
2.			
3.			
4.			
5.			
Total Cover: 3			
Herb Stratum			
1. Erodium cicutarium	2	Y	UPL NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 2			
Woody Vine Stratum			
1.			
2.			
Total Cover: 0			

% Bare Ground in Herb Stratum 98 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species 5	x 5 =	25
Column Totals: 5 (A)		25 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: P. bicolor on edge of bank.

Sampling Point: 65-1

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
18"	10YR		4/2				Gravel	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ____ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Indicators - Confined, pc, tv, sd, S, Cl

Substrate Composition - Gravel

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: DSX City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: DS-2
Investigator(s): JW, JH Section, Township, Range:
Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): 3%
Subregion (LRR): D ~~Lat:~~ W -115.554488 ~~Long:~~ N 35.471811 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or ~~Hydrology~~ ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OW HM: w 6' h 6" S 2:1 Photos: 9834: S 9835: NE

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1. Hymenoclea salsola	5	Y	UPL NL
2. Ambrosia eriocentra	5	Y	UPL NL
3. Ferrameria laricifolia	3	Y	UPL NL
4.			
5.			
Total Cover:	13		
Herb Stratum			
1. Erodium cicutarium	1	Y	UPL NL
2. Aristida purpurea	1	Y	UPL NL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	2		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 98 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: Ø (A)
Total Number of Dominant Species Across All Strata: 45 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: Ø (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species 15	x 5 = 75
Column Totals: 15 (A)	75 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: MS-2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	10YR 4/2							gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) **(Riverine)**
- ✓ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

OHWM Ind.: SD, CL, S, PC, TV - Low Prob

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 215X City/County: San Bernardino Sampling Date: 3/14/08
Applicant/Owner: Circle Point State: CA Sampling Point: 65-3
Investigator(s): S. Holson, J. Windbelt Section, Township, Range:
Landform (hillslope, terrace, etc.): Toe slope Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D Lat: W -115.563922 Long: N 35.474214 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ____ No ✓
Wetland Hydrology Present? Yes ____ No ✓
Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks: OHWM: w 1' h 3" S 2:1 Photos: 9836: NE 8837: S

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Ambrosia eriocentra	10	Y	UPL
2. Eriogonum fasciculatum	8	Y	UPL
3. Hymenoclea salsola	6	Y	UPL
4.			
5.			
Total Cover:	24		
Herb Stratum			
1. Erodium cicutarium	3	Y	UPL
2. Aristida purpurea	1	Y	UPL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	4		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 96 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species 28	x 5 = 140
Column Totals: 28 (A)	140 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 165-3

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
14	10.5 Y/R 4/2							gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): _____

Water Table Present? Yes ____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

T: CL, S, SD, RC - Confined

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: BSX City/County: San Bernardino Sampling Date: 3/14/06
Applicant/Owner: Circle Point State: CA Sampling Point: 65-4
Investigator(s): D. Holson, S. Windbolt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 2%
Subregion (LRR): D Lat: N 115.570569 Long: W 35.476049 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation NO, Soil ____ or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____ or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM: w 1' h 2" S 3:1 Photos: 6838: S 6839: N

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	Ø		
Sapling/Shrub Stratum			
1. Baccharis salicifolioides	2	Y	FAC UPL
2. Ambrosia psilostachya	2	Y	UPL NL
3. Hymenoclea salsola	2	Y	UPL NL
4.			
5.			
Total Cover:	6		
Herb Stratum			
1. Erodium cicutarium	3	Y	UPL NL
2. Aristida purpurea	1	N	UPL NL
3. Salsola tragus	2	Y	UPL (FACU)
4. Bromus tectorum	1	N	UPL NL
5. Erioneuron pulchellum	<1	N	UPL NL
6. >C = S. kali			(FACU+)
7. or = S. pestifer			(FACU)
8.			
Total Cover:	8		
Woody Vine Stratum			
1.			
2.			
Total Cover:	Ø		

% Bare Ground in Herb Stratum 92 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: Ø 1 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: Ø 20 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 2	x 3 =	6
FACU species 2	x 4 =	8
UPL species 14 10	x 5 =	7050
Column Totals: 14	(A)	7064 (B)

Prevalence Index = B/A = Ø 4.57

Hydrophytic Vegetation Indicators:
__ Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 65-4

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
8	10YR 4/2							gravelly cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: TSX City/County: San Bernardino Sampling Date: 3/14/10 R
Applicant/Owner: Circle Point State: CA Sampling Point: 65-5
Investigator(s): S. Holson, J. Windbelt Section, Township, Range:
Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): concave Slope (%): 3%
Subregion (LRR): D ~~Lat:~~ W -115.578832 ~~Long:~~ N 35.475842 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: N/A ZONE 11
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation No, ~~Soil~~ ____, or ~~Hydrology~~ ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation No, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No N/A	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: OHWM W 12' H 1' S 3:1 Photos - 9841 - South 9842 - North

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Ambrosia eriocentra	5	Y	UPL NL
2. Atriplex canescens	3	Y	UPL FACU NL
3. Hymenoclea salsola	2	N	UPL NL
4. Encelia frutescens	2	N	UPL NL
5.			
Total Cover:	12		
Herb Stratum			
1. Erodium cicutarium	2	Y	UPL NL
2. Eriogonum inflatum	2	Y	UPL NL
3. Achnatherum hymenoides	2	Y	UPL NL
4. Bromus tectorum	1	N	UPL NL
5.			
6.			
7.			
8.			
Total Cover:	7		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum 93 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 3	x 4 =	12
UPL species 19 16	x 5 =	9580
Column Totals: 19 (A)		9592 (B)

Prevalence Index = B/A = 504.84

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Sampling Point: 65-5

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

N/A

Hydric Soil Present? Yes _____ No _____

Remarks: No soil pit dug.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Other Indicators - Cl, CS, Sd, SS, PC, Dense L

Soil Composition - gravel, sand, cobble, riprap

Exhibit C

Representative Areas Potentially Excluded from Corps Jurisdiction Based on Corps-EPA *Rapanos Guidance*, DesertXpress Project, HUC 8 Death Valley-Lower Amargosa Watershed Draining to Badwater Basin

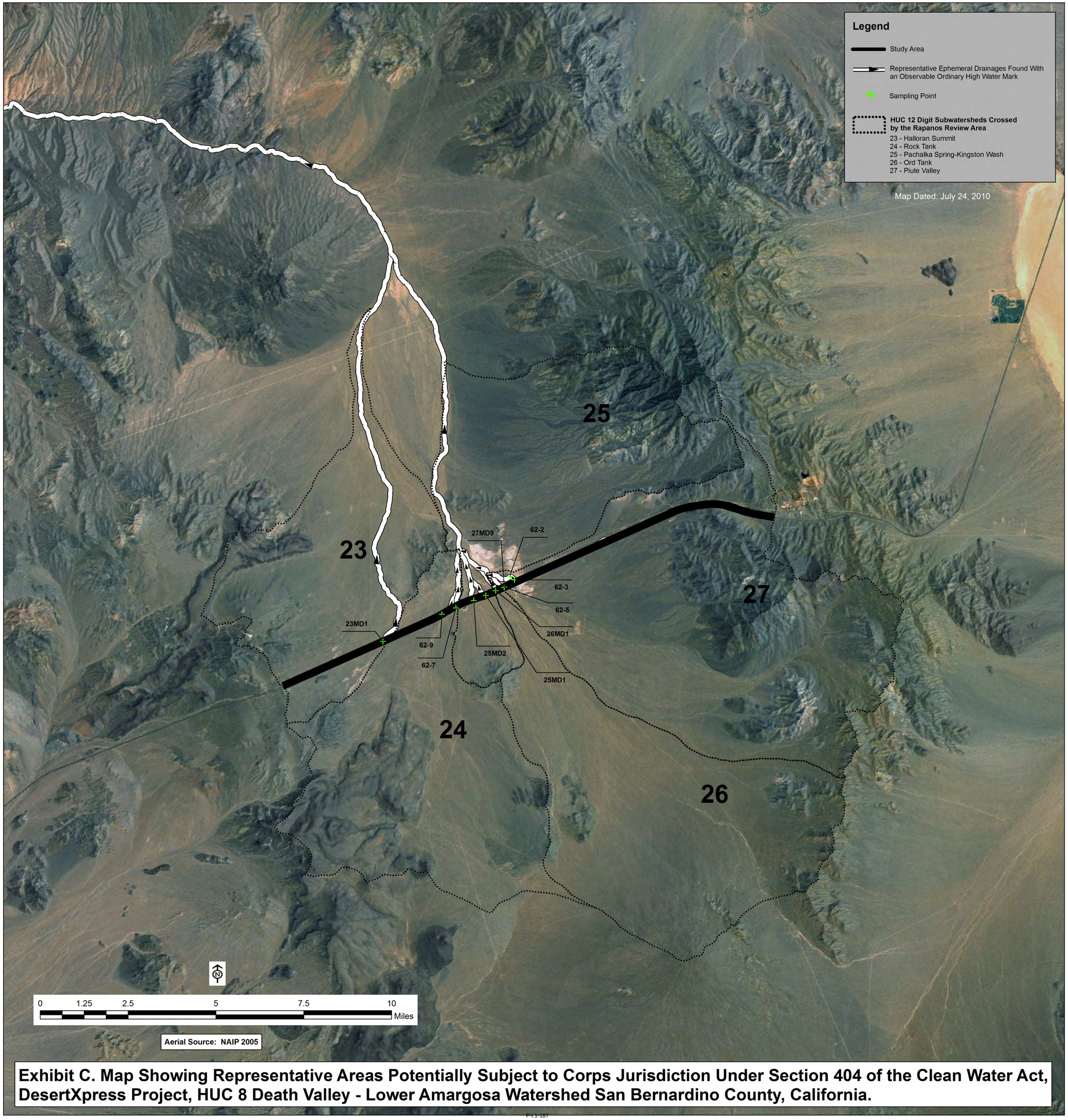

Exhibit C. Map Showing Representative Areas Potentially Subject to Corps Jurisdiction Under Section 404 of the Clean Water Act, DesertXpress Project, HUC 8 Death Valley - Lower Amargosa Watershed San Bernardino County, California.

Exhibit D

Hydrology Maps for CWA Jurisdictional Analysis

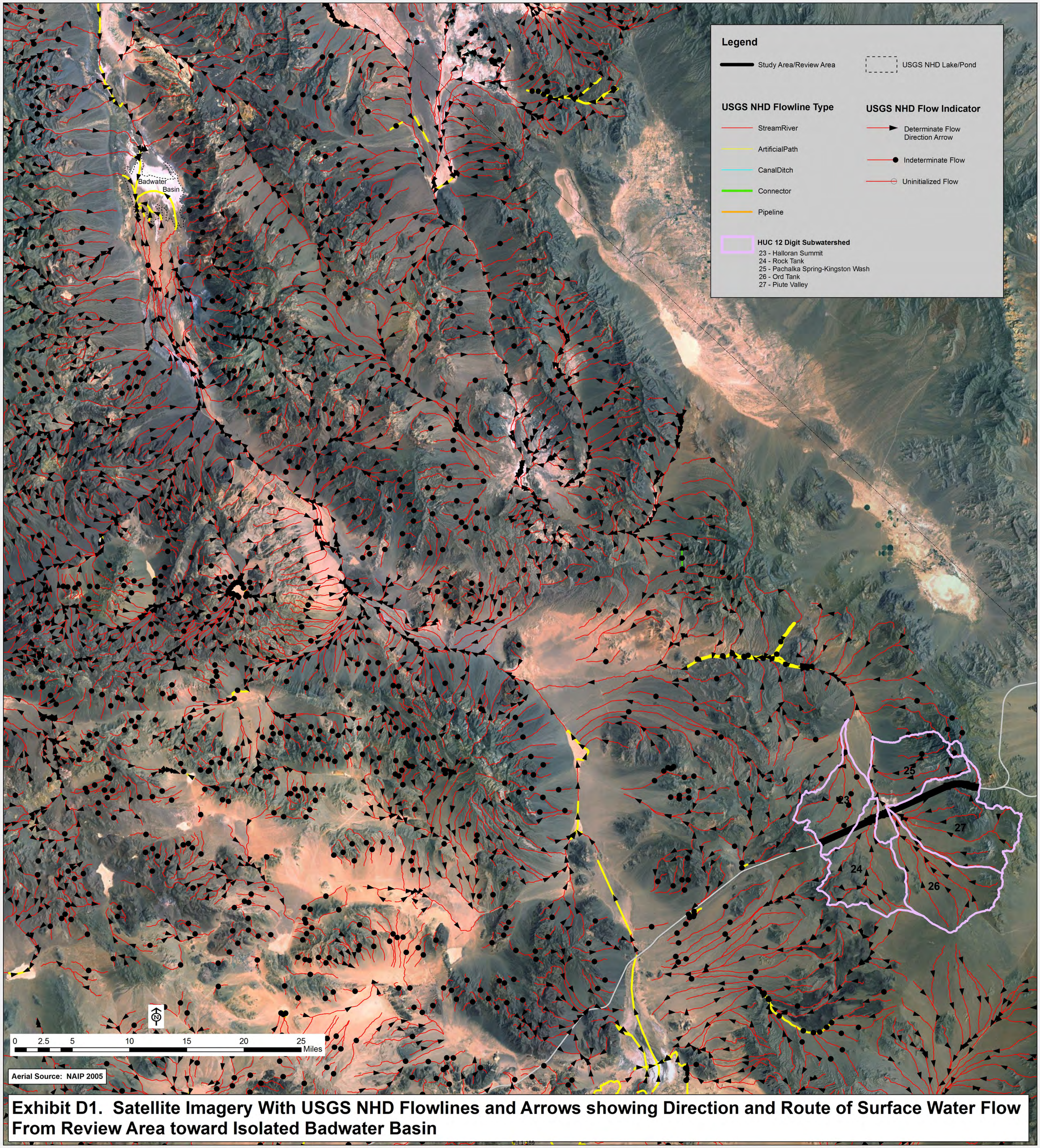

Exhibit D1. Satellite Imagery With USGS NHD Flowlines and Arrows showing Direction and Route of Surface Water Flow From Review Area toward Isolated Badwater Basin

Legend

- Study Area/Review Area
- USGS NHD Lake/Pond

USGS NHD Flowline Type

- StreamRiver
- ArtificialPath
- CanalDitch
- Connector
- Pipeline

USGS NHD Flow Indicator

- Determinate Flow Direction Arrow
- Indeterminate Flow
- Uninitialized Flow

HUC 12 Digit Subwatershed

23 - Halloran Summit
24 - Rock Tank
25 - Pachalka Spring-Kingston Wash
26 - Ord Tank
27 - Piute Valley

0 2.5 5 10 15 20 25 Miles

Base Map: USGS 1:100,000 Ivanpah California-Nevada (1985); Mesquite Lake California-Nevada (1985); Death Valley California-Nevada (1986); Owlshead Mountain California (1993); Soda Mountains California (1993); Darwin Hills California (1985); Ridgecrest California (1993);

Exhibit D2. USGS Topographic Mapping With USGS NHD Flowlines and Arrows Showing Direction and Route of Surface Water Flow From Review Area toward Isolated Badwater Basin

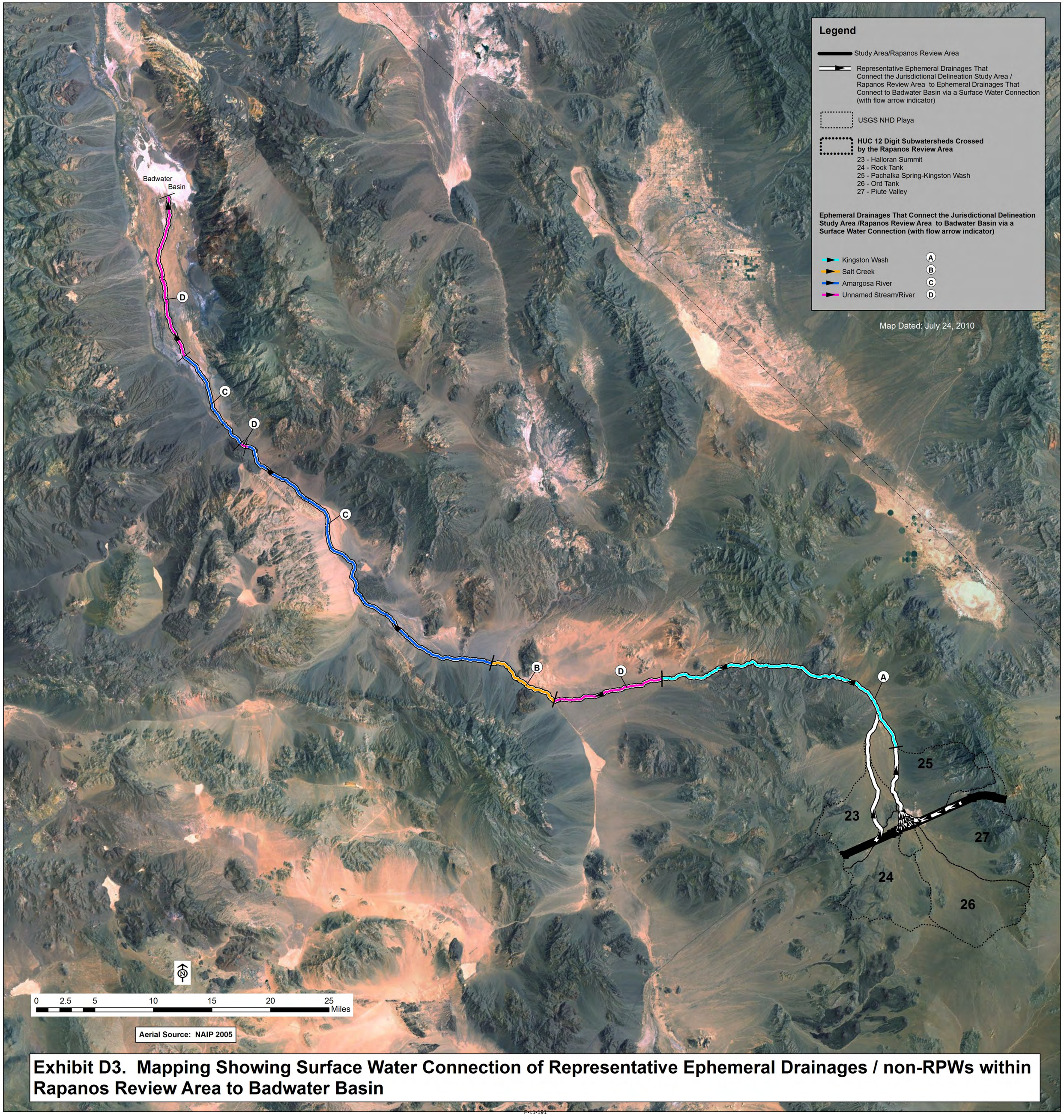

Exhibit D3. Mapping Showing Surface Water Connection of Representative Ephemeral Drainages / non-RPWs within Rapanos Review Area to Badwater Basin

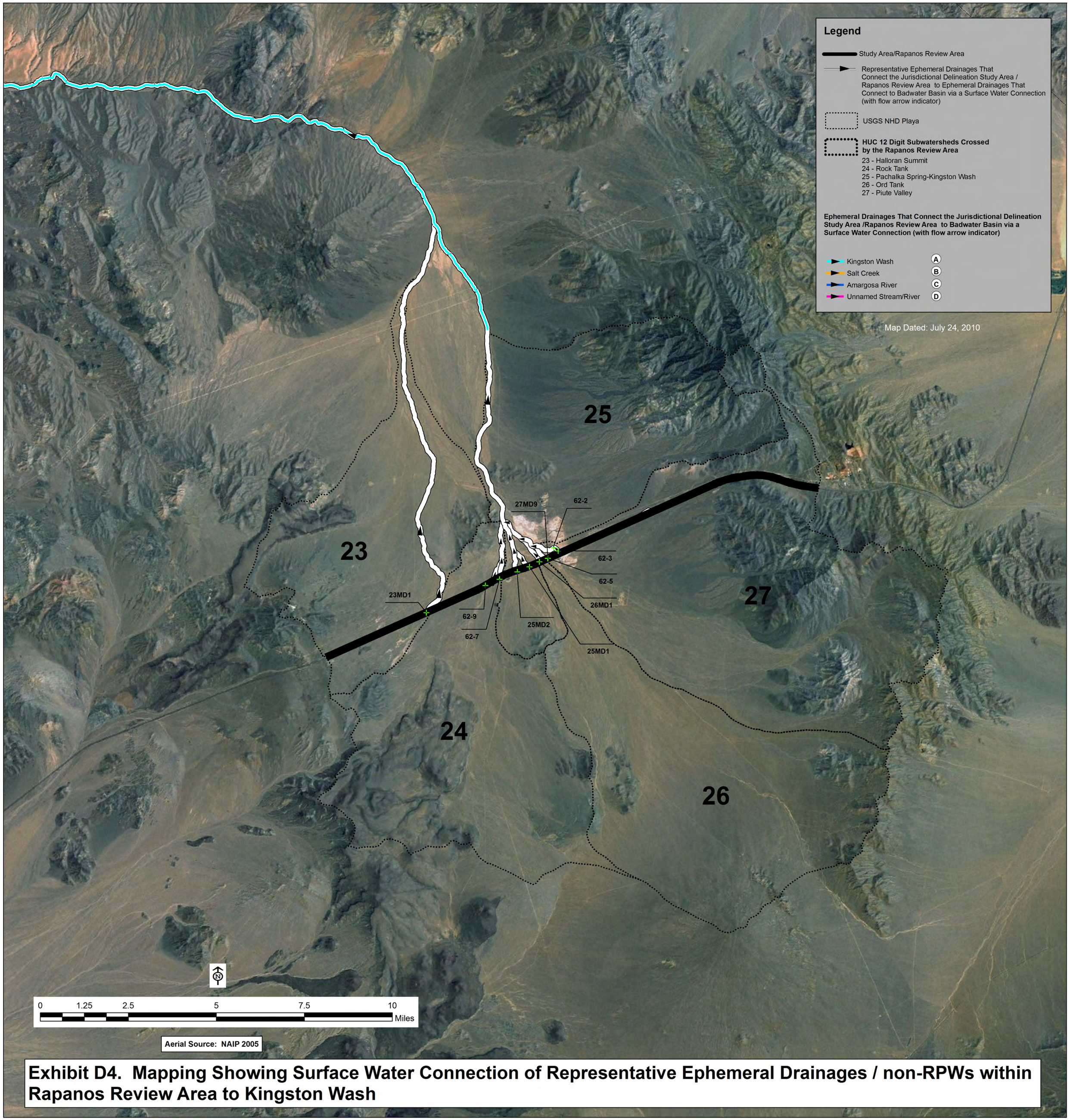

Exhibit D4. Mapping Showing Surface Water Connection of Representative Ephemeral Drainages / non-RPWs within Rapanos Review Area to Kingston Wash